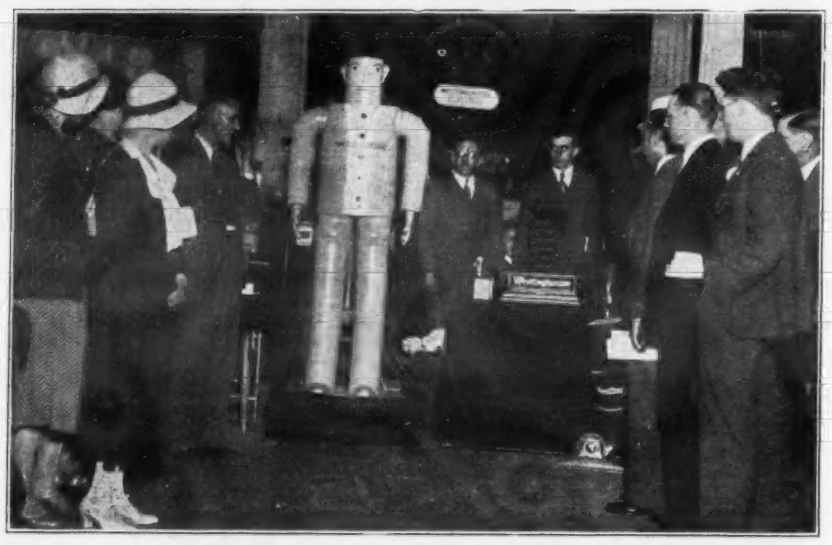
Testing Golf Balls

This device of Electrical Testing Laboratories kept N. E. L. A. visitors fascinated. With each swing of the pendulum a golf ball rolls off the standard, bounces on a steel plate (shown between the papers on platform), bounces again onto the raised table and then drops into a pocket. Any lack of trueness of the sphere is recorded by variations in position of the second bounce.

'Willie Vocalite'



The Westinghouse robot, used frequently for openings by new refrigeration dealers, attracted N. E. L. A. crowds. He stands up, sits down, puffs a cigarette and does other stunts at the vocal command of his master.

Kulair Shows Seven Condensing Units at N.E.L.A.

ATLANTIC CITY, N. J.—Seven models of condensing units offered by the Kulair Corp. of Philadelphia were on display in the Kulair booth at the N. E. L. A. convention here last week. Both air and water cooled types were included in the exhibit of models 1450-SA, 800-SA, 2800-MA, 2000-MA, 1900-MW, 2000-MW and 1900-MA.

The last named machine was connected and operating a 10 ft. "Super-Cold" mahogany butchers' display case in which various cuts of meats were being preserved.

Model 1450-SA which has just recently been announced, is designed for self-contained cabinets or remote installations. It is rated at 135 lbs. I. M. C. per 24 hours, with sulphur dioxide. It is an air cooled machine, operated at 425 r. p. m. by a 1-6 hp. motor. Copper fin type condensers are used.

The liquid shut-off, discharge, and suction shut-off valves are made of drop forgings. The condensing units have V belts, four-blade fans on the motor, and rubber base mountings.

Type 2000-MW, the largest size exhibited, is designed for commercial installations requiring up to 1828 lbs. of refrigeration, its rated capacity with methyl chloride. It is a water cooled machine, using a 2 hp. motor to turn the compressor at a speed of 300 r. p. m. It stands 33 in. high, on a base 20x41 in.

CARRIER GROUP ORGANIZES EXPORT COMPANY

NEWARK, N. J.—Formation of Carrier-Brunswick International, Inc., to handle all business outside the United States and Canada for the Carrier Engineering Corp., Carrier-York Corp. and the Brunswick-Kroeschell Co. is announced by officials of the Carrier Corp. of this city. Offices of the new export company are located at 850 Frelinghuysen Ave., Newark.

Leland Motors

for ELECTRIC REFRIGERATION

The Leland Motor is particularly well adapted to the demands of electric refrigeration, in which specialized field they have met with widespread favor. They are sturdy, dependable, unusually quiet running and are available in the various fractional ratings required in this industry.

The Leland Electric Co.
Dayton Ohio, U. S. A.
Canadian Address Toronto
Cable Address "Lelect-Dayton"

CLOSED SUCTION, RECEIVER VALVES ADVISED IN TRANSIT

IT IS a very desirable practice to set up the self-contained cabinets in the service station for operation and test before delivering them to the customer It has been found, however, that in some cases when the cabinet is set up for the customer, the compressor develops a knock. This is usually due to improper handling of the equipment.

When the refrigerating system is tested at the service station, the refrigerant and oil comes to the proper balance throughout the system. When the compressor suction service valve and liquid receiver service valve are left open and the cabinet tipped on its side during delivery, extra oil and liquid refrigerant are permitted to get into the compressor base.

The result is that when the unit is started again, slugs of oil and refrigerant going through the compressor cause knocks, and it takes some time for the system to balance itself again.

The proper procedure, therefore, is to close the compressor suction service valve and liquid receiver service valve to the right after testing the Kelvinator at the service station, and before delivery to the customer. This will prevent the extra oil and refrigerant from getting into the compressor base. *Kelvinator Service News.*

YORK INSTALLING EQUIPMENT IN NATIONAL PRESS BLDG. AT WASHINGTON

WASHINGTON, D. C.—(UTPS)—The cafeteria in the basement of the National Press Bldg., here is being equipped with new refrigeration equipment by the York Ice Machinery Corp. The new equipment will also cool water for the Fox Theater, located in the same building.

Economy . . . . through positive refrigeration control

MERCOID NO. 858

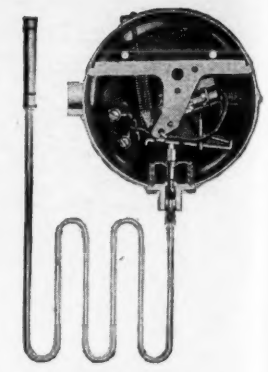
Accurate, reliable control saves current and possible waste that may result from spoilage. For milk coolers, frozen food cases, soda fountains, ice cream cabinets and other refrigerating equipment, Mercoid No. 858, Model LL-1, furnishes perfect automatic control.

It is easily adjusted for any cut-in or cut-out point and is low in price.

Mercoid Controls operate by temperature, vacuum and pressure. There is one of these durable and dependable devices for every refrigeration need. They carry the full line current—110 or 220 volts—without corrosion of contacts. No relays or transformers.

Mercoid controls, combining automatic control with high-pressure cut-out in one instrument are available.

A postcard will bring you full information about these instruments together with description of the No. 682 Arco Solenoid Valve for water-cooled units.

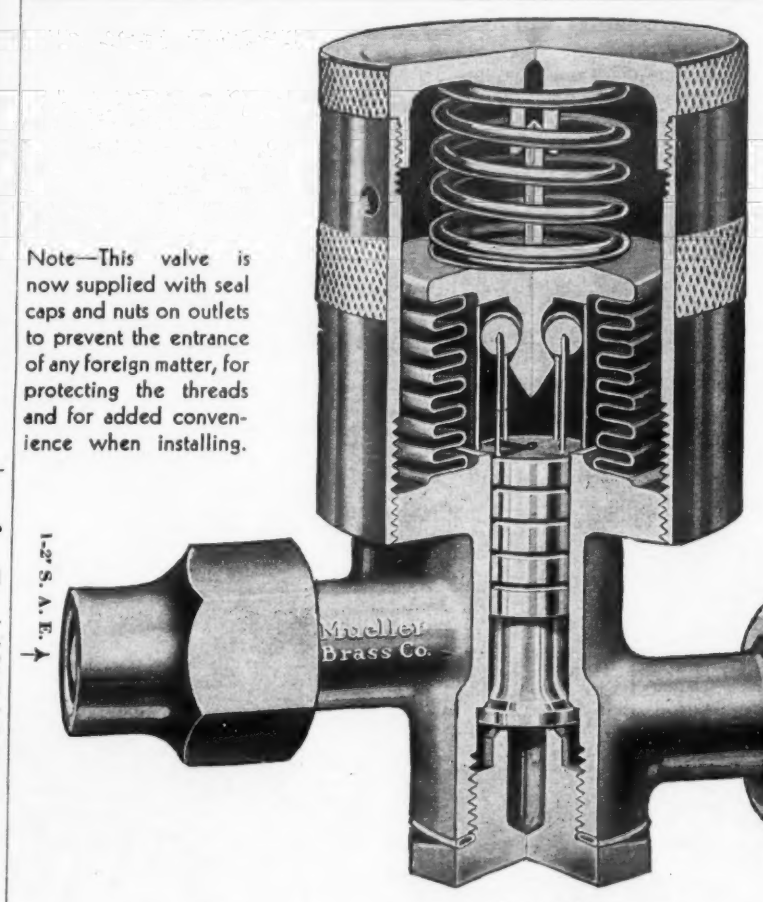


MERCOID CONTROL
No. 858
MODEL LL-1

Furnished in ranges minus 10° to plus 25° and plus 10° to plus 50° with a differential as close as 2½° or as wide as 12°. Changing the cut-in point at high does not change the cut-out point at low

Accessories Division
AMERICAN RADIATOR COMPANY
5842 Trumbull Avenue, Detroit, Mich.
Division of
AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

Note—This valve is now supplied with seal caps and nuts on outlets to prevent the entrance of any foreign matter, for protecting the threads and for added convenience when installing.



A-11095

MUELLER
Two-Temperature Control
SNAP VALVE

THIS valve is so constructed as to make it a real aid to the service man. By merely turning the outside knurled case he can raise or lower the temperature without danger of losing the differential which was previously properly set.

The differential is built into the valve and cannot be changed.

The temperature range may be changed without the necessity of a recheck or numerous visits of the service man.

Simplicity of construction insures a long and trouble proof life.

The snap action feature prevents seat erosion and assures uniform performance.

The body is a brass forging, thus making it seep proof and free from defects.

NOTE: WHEN ORDERING SPECIFY "CUT-IN" AND "CUT-OUT" READINGS.

Mueller Brass Co. Valves and Fittings are approved by the Underwriters' Laboratories of Chicago.

We manufacture a complete line of valves and fittings and can supply your every requirement.

Mueller Brass Co.
PORT HURON, MICHIGAN
THREE GENERATIONS OF BRASS MAKING

LIBRARY
BRANCH OF THE
COLLEGE OF AGRICULTURE

In Three Parts

Merchandising Section

Part One

ELECTRIC REFRIGERATION NEWS

Registered U. S. Patent Office.

The business newspaper of the refrigeration industry

ISSUED EVERY TWO WEEKS
VOL. 5, No. 22, SERIAL No. 124

Copyright, 1931, by
Business News Pub. Co.

DETROIT, MICHIGAN, JULY 1, 1931

Entered as second class matter
Aug. 1, 1927, at Detroit, Mich.

FIFTEEN CENTS PER COPY
TWO DOLLARS PER YEAR

OFFICIALS MEET TO MAKE PLANS FOR NORGE DRIVE

First Nation Wide Sales Campaign Opens July 15

DETROIT—Norge district managers and Cramer-Krasselt representatives were called into a one day meeting at the Detroit Leland Hotel June 18, by John H. Knapp, Norge vice president and director of sales, to learn details of the "Norge Rollator Marathon Contest" soon to start. It is the first national Norge contest.

Reports show that 45 Norge distributors and eight Norge branches together with approximately 4,000 Norge dealers will unite in this summer sales drive to start July 15. The contest is open to the retail representatives of Norge dealers.

The slogan is "Step Ahead." Prizes have been arranged for all qualified entrants, and their wives. The contest is unique in that each participant competes only with himself.

Jack Frohlich has been appointed national contest manager at the Norge factory offices, and each Norge distributor has appointed a contest manager to handle details in his territory during the three months over which the contest runs. Mailings, certification awards and qualifying souvenirs have been prepared.

Norge distributors are arranging dealer meetings to be held in 58 cities, scattered throughout the country, during the

(*Concluded on Page 2, Column 1*)

JOHN E. STARR, FIRST A. S. R. E. PRESIDENT, DIES

NEW YORK CITY—John E. Starr, one of the pioneers in the development of ice-making and cold storage systems, and the first president of the American Society of Refrigerating Engineers, died while in bed, Saturday morning, June 27, at his summer home in Mattatuck, Long Island. He was about 75 years old.

He was an important figure in the organization of the A. S. R. E. in 1904, and was deeply interested in all refrigerating engineering progress.

Until a few days before his death, Mr. Starr had been active in his consulting service, the Starr Engineering Co. He is survived by one daughter. For the past 10 years he had been making his home at the Salmagundi Club, here in New York City.

MAJESTIC'S MAY BUSINESS TOPS 1930 RECORD MARK

CHICAGO, Ill.—Net sales of the Grigsby-Grunow Co. for the month of May amounted to $2,609,086.24 as compared with sales of $558,778.68 for May, 1930.

The increase is due to the new business on Majestic electric refrigerators, according to Don N. Campbell, vice president and general manager.

The company closed its plants for a 10-day factory vacation period June 26 and will resume operations on Monday, July 6.

CUTTER CLOSES 460-UNIT APARTMENT ORDER

CHICAGO — Max G. Cutter, crew supervisor of the domestic refrigeration division of Commonwealth Edison Co., is reported as having landed the largest single order for refrigeration ever closed by a Chicago organization.

The contract signed by John Kempson calls for 460 Kelvinators for installation in his 11 apartment buildings, located near Garfield Park.

COLE LEASES SHOW ROOM SITE IN BROOKLYN

BROOKLYN—Signing of a three-year lease for a show room site at 1931 Kings Highway, at Ave. P., this city, is announced by Rex Cole, General Electric refrigerator distributor in this area. Improvements to the property will start at once, Cole declared.

Calls Meeting

JOHN H. KNAPP
Norge vice president, tells field force about campaign.

OHIO WORKERS PUSH SALES ABOVE QUOTA

CLEVELAND—Every member of the Ohio Public Service Co., from office boys to president, and including meter readers, maintenance and service men and office workers, became a salesman to put this utility's spring electric refrigerator campaign over the top.

On June 19 about 125 representatives from the nine Northern Ohio communities served by this power company gathered at the Hotel Statler here, to celebrate successful completion of the campaign. A total of 1,297 electric refrigerators were sold during a 60-day campaign, the quota of 1,200 units being passed during the closing days of the campaign.

Employes became prospect hunters, turned in 3,000 names. More than 20 per cent of these prospects became pur-

(*Concluded on Page 4, Column 4*)

GUNPOWDER OPENS DRIVE OF FRIGIDAIRE DEALER

HAGERSTOWN, Md.—Real gunpowder gave the bang to the opening gun which marked the beginning of a special eight weeks' Frigidaire sales campaign started on June 15 by the Potomac Edison Co.

At a special meeting at the beginning of the campaign, attended by Potomac Edison officials and representatives of Frigidaire Corp., W. L. Hyssong, merchandising manager, announced the drive amid a fusillade of rifle shots. A quota of 400 units has been set for the campaign.

DRY-ZERO SENDS 25,000 DEALERS GIANT DISPLAYS

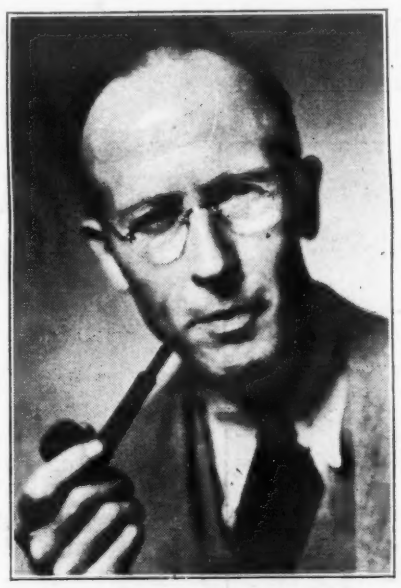
Use of Insulation Shown In Majestic, Norge Cabinets

CHICAGO—At the disposal of every Majestic and Norge refrigerator dealer in the United States, the Dry-Zero Corp., manufacturers of Dry-Zero pliable slab insulation used by the makers of both these refrigerators, this week will place a giant wall and window display pointing out to potential customers the part insulation plays in refrigeration.

The display is 19 by 26 inches, is printed in full color and illustrates the Majestic cabinet for Majestic dealers, and the Norge for Norge dealers.

"The display places squarely in front of the prospect's eyes a completely hidden part, yet one of the vital elements of the refrigerator," says Raymond Ring, Dry-Zero general sales manager.

"It is difficult for the salesman to talk about something the customer cannot see and perhaps has thought nothing about, and it is perhaps more difficult for the customer to picture insulation in his own mind. With this display in plain view, the salesman can turn this hidden factor into an argument that is easy for the customer to understand."



HARVEY B. LINDSAY
President of Dry-Zero Corp.

Twenty-five thousand displays have been printed. They are being turned over to the Majestic and Norge organizations now, and will be distributed simultaneously over the entire country.

Generalissimo

H. C. JAMERSON
Who will direct the Frigidaire Anniversary Jubilee.

BROOKLYN CO. STARTS MONOPLANE CONTEST

BROOKLYN, N. Y.—A monoplane with three motors symbolizes the sales contest inaugurated June 1 in the new business department of the Brooklyn Union Gas Co. The contest, which is being directed by R. L. Hallock, retail sales supervisor, will conclude July 31.

The three motors in the monoplane, which is expected to reach a new sales altitude record, signify the three divisions of salespeople made for the contest. They are the old district salesmen, sales floor men and the new district salesmen.

First prize in each of the three groups will be $25 plus a letter of recognition from Vice President C. E. Paige. Second and third prizes will be, respectively, $15 and $10 in each group.

Scoring in the contest will be based on allotted credits for various appliances. Six credits are given for each gas refrigerator, with Electrolux models EA-18 and EA-20 of double value.

Harry Schroeder, of Brooklyn branch, has taken a commanding lead in the old district salesman class with 66 points for the first week of the contest. Lovat Cornwell, of Brooklyn branch, took the lead in the sales floor group with 56 points. James Eagan, of the Flatbush district, took the lead position in the new district men with 20 points.

ALABAMA CENTRAL STATION BILL POSTPONED

MONTGOMERY, Ala.—The bill proposed to ban utilities from merchandising items in Alabama has been indefinitely postponed by the Legislature.

FRIGIDAIRE CORP. TO OPEN 49-DAY SALES CAMPAIGN

Fifteenth Anniversary Jubilee Starts July 6

DAYTON, Ohio—Two million door knob hangers are now in the hands of Frigidaire dealers ready to swing from two million door knobs on July 6 when the Frigidaire Corp. begins its Fifteenth Anniversary Jubilee, which will be celebrated during July and August in all parts of the United States and Canada.

The two million door knob hangers scheduled for distribution on July 6 will herald the opening of a 49-day sales campaign. A special campaign organization, extending from the factory down to the smallest dealerships, has been completely set up, and will do nothing but handle details of the campaign.

H. C. Jamerson, sales manager in charge of product distribution at the factory has been appointed general campaign manager. A special campaign organization has been set up in each sales district in military style, with titles ranging from captain to general. A system of daily and weekly reports has been inaugurated to mark the progress of the campaign.

"This campaign provides a natural means of attracting public attention, it supplies a natural reason for making a special appeal to the prospect, it has a natural prestige appeal, and it provides a recognized merchandising occasion," declares Mr. Jamerson.

Invitations to visit show rooms, to be mailed to known prospects, will go out in a reproduction of handwriting, printed in signature ink. The dealer can affix his own signature with such effect that the letter looks like an actual handwritten invitation.

A little folder, "Tempting Suggestions for Summer Appetities," has been provided dealers and salesmen to be used

(*Concluded on Page 4, Column 5*)

HARRY NORVELL, PIONEER IN REFRIGERATION, DIES

CLEVELAND—Harry Deweese Norvell, president of the City Ice & Fuel Co., largest corporation of its kind in the country, died June 16, in his apartment at Wade Park Manor.

Mr. Norvell had been ill for several weeks following his return from a trip to Florida. He was 72 years old. Mrs. Blanche Norvell, his widow, is the only survivor.

At his death the corporation he headed controlled 33 subsidiaries in 23 states and Canada. It had 4,200 employes in 129 plants. Some of the companies Mr. Norvell controlled were in New York, Cincinnati, Toledo, Buffalo, and Pittsburgh.

PETRIE, SMITH TALK TO COLUMBUS DEALERS

COLUMBUS, Ohio — The Perry B. Whitsit Co., Kelvinator distributor, was host to dealers at a recent dinner meeting at the Chittenden Hotel.

Regional Director R. I. Petrie and Field Sales Representative Charles Smith spoke at the meeting. Other speakers were W. F. Davison, general manager, and Messrs. Heinzelman and Ryder of the Whitsit Co.

SEATTLE COMPANY TAKES OVER FRIGID-ZONE BUSINESS

SEATTLE, Wash.—The Majestic Furnace Co. has taken over the plant and business of the Frigid-Zone Manufacturing Co., makers of Frigid-Zone electric refrigerators.

The refrigerator company went into hands of a receiver here recently. W. H. Carseth is manager.

DALLAS STORES ANNOUNCE NEW REFRIGERATION DEPARTMENTS

DALLAS, Tex.—The Edison Shops, Inc., 1018 Elm St. and 3513 Oak Lawn Ave., has installed Frigidaire departments in both of its Dallas stores.

Delivering the Goods

Employes of Frank H. Johnson-Son-Crowen, Inc., delivering Westinghouse refrigerators for installation in the swanky new Abbey Garth apartment building in Evanston, Ill.

NORGE PLANS FIRST NATIONWIDE CONTEST

(*Concluded from Page 1, Column 1*)

period of June 20-July 14 at which Norge representatives will thoroughly school dealers and their salesmen in the contest plans.

Factory representatives attending these meetings are: M. G. O'Harra, T. P. Hallock; John H. Knapp, vice president and director of sales; J. E. Oliphant; R. E. Densmore; Jack Frolich, contest manager; A. N. Dalzeith; Howard E. Blood, president, Norge Corp.

The representatives of the Cramer-Krasselt Co., Milwaukee (Norge advertising agency) who will accompany Norge representatives are: R. E. Caldwell, director of merchandising; O. J. Blake, A. W. Seiler, executive vice president in charge of service; Harry Terry, contact staff; F. C. Cramer, president; W. A. Farnum, G. E. Stedman, director of public relations.

SPRINGFIELD JEWELER TURNS TO REFRIGERATION

SPRINGFIELD, Ill.—Entering the refrigeration field as Servel dealers, the Frank A. Bridge Jewelry Co. has recently opened up a refrigeration department with two models on display.

In the six weeks the company has been in the refrigeration business the sales have been good, according to Mr. Bridge.

DEPARTMENT STORE SHOWS WESTINGHOUSE LINE

SEATTLE, Wash.—Fraser-Paterson, department store, has been appointed retail dealer for the Westinghouse refrigerator line by the Fobes Supply Co.

Hugh T. Campbell is manager of the Fraser-Paterson refrigerator department.

Wins First Prize in Coin Hunt

Campbell Wood demonstrating the Kelvinator model, which was won by Mrs. B. F. Weadock of Greenwich, Conn., in the "Swapping Coins" contest staged by Kelvinator at the N. E. L. A. convention.

Millionth G.E. Unit Presented to Ford

DETROIT—Permanent exhibits of the social and industrial progress of the nation, in Henry Ford's museum at Dearborn, Mich., the Edison Institute of Technology, now include a gold plated refrigerator, the millionth manufactured by the General Electric Co.

The refrigerator was presented to Mr. Ford Saturday night during a nationwide radio program broadcast over the N. B. C. network. The presentation was made by Gerard Swope, president of the General Electric Co., in a short talk from his home, "The Croft," in Ossining, N. Y.

The motor magnate's acceptance was made from the museum in Dearborn. It was Mr. Ford's formal radio debut. Mr. Ford's acceptance, the first time he has said more than a few words over the radio, was, in part, as follows:

Said Mr. Ford: "Electric refrigeration is a great service to humanity. It helps to maintain physical health by keeping food in good condition, and it prevents economic waste by preserving food until it is used.

"We shall place this millionth refrigerator in our Edison Institute of Technology for the use of our students at Dearborn. There is something fitting in thus connecting the names of Edison and the General Electric, for the General Electric Co. itself is an outgrowth of Mr. Edison's work."

Swope Pays Tribute

Mr. Swope, in his radio address, paid a stirring tribute to Mr. Ford and his achievements and to Thomas A. Edison. The address, in part, follows:

"I am here this evening to pay tribute to Henry Ford, as the founder and the acknowledged master in the quantity production of manufactured goods. In my own company we have profited by Mr. Ford's pioneering in quantity production. The General Electric refrigerator is our shining example.

"This millionth General Electric refrigerator has been finished in gold to distinguish it from all other refrigerators. Last week it was exhibited at the convention of the National Electric Light Association at Atlantic City. Tonight it gives me the deepest pleasure to present it to my good friend Henry Ford, in token and appreciation of the methods of mass production of which he is the father and leading exponent and without which the General Electric refrigerator could not possibly have made such rapid progress.

"And so, Mr. Ford, please accept this golden, one millionth General Electric refrigerator, to be placed in the Edison Institute of Technology at Dearborn, Mich. We hope that it may be a fitting and permanent expression of our appreciation to two great men and to two great friends—yourself and Thomas Alva Edison. The whole electrical industry is but Thomas Edison's brainchild grown to manhood. Without his contribution there would be no General Electric Co. Without your contribution there would be no millionth General Electric refrigerator for many years to come."

The scene of the acceptance in the museum at Dearborn was described to the radio audience by Floyd Gibbons, radio speaker, author and war correspondent, who was brought to Detroit from New York for that particular purpose.

Sidney Caswell and Harvey Stull, Detroit distributors for G. E. refrigerators, took the millionth G. E. out to Dearborn. Enroute, the golden refrigerator was paraded through downtown Detroit on a white Ford truck, followed by 10 of Caswell-Stull's white Ford business coupes, and preceded by a squad of motorcycle policemen.

The presentation of this golden refrigerator to Mr. Ford marked the climax of the General Electric refrigeration department's millionth refrigerator jubilee.

Distributors, dealers and utilities in all parts of the country are participating in the jubilee. Special radio programs have been and are being used, newspaper and magazine advertisements carry the message. Distributors have held torchlight parades and have displayed replicas of the millionth refrigerator.

SAN DIEGO BUREAU ACTIVE IN CAMPAIGN

SAN DIEGO, Calif.—Coordinated activity in the interests of electric refrigeration is being carried on in this city under the auspices of the Electric Refrigeration Bureau.

A. E. Holloway, commercial superintendent of the San Diego Consolidated Gas & Electric Co., is chairman of the organization. An increase in business has been shown by almost every dealer in the territory served by the Consolidated Gas & Electric Co.

Twelve dealers had banded together under the name of the San Diego Electric Refrigeration Association prior to the announcement of the national program, and this gave the local bureau both a nucleus and a head start.

Since the Electric Refrigeration Bureau campaign has been under way each dealer in the territory has been invited by the bureau to cooperate with its activity for the general promotion of electric refrigeration sales.

A special newspaper refrigeration section, published on June 1, contained advertisements of 15 types of electric refrigerators, together with a large general advertisement paid for by the central station. Illustrations and copy were similar to those prepared by the national bureau.

NORGE, MAJESTIC NAME SEATTLE DEALERS

SEATTLE, Wash.—New dealers for the Norge and Majestic refrigerators have been announced by distributors in this field.

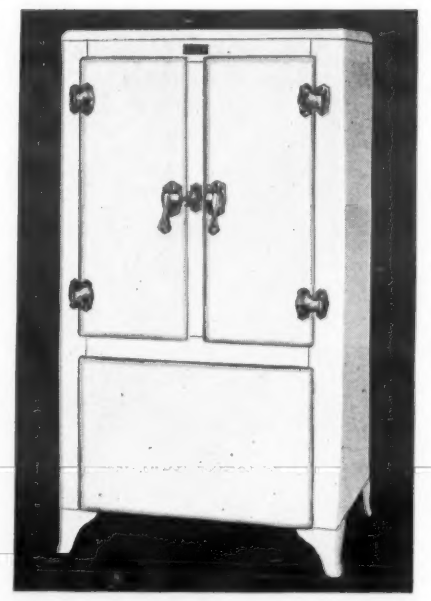
The Broberg Music Co., 5517 University Way, this city, has added the Norge line, while the Northwest Oil Burner Corp., which has its headquarters at 416 Virginia St., has been named dealer for the Majestic refrigerator.

In Portland, Ore., the large department store operated by Lipman, Wolfe & Co. is displaying a complete line of Norge models.

A REFRIGERATOR MOTOR IS DIFFERENT

Trouble-free performance is of highest importance in an electric refrigerator. Should the motor stop for a day, a household would be upset and a reputation greatly endangered. That is why Delco engineers have provided extreme precautions against failure in Delco refrigerator motors. That is why Delco manufactures with exacting precision, and tests each motor thoroughly. Delco Motors must be dependable. Two million in service today attest to Delco's unfailing quality. National distribution for Delco Motors is provided through the facilities of United Motors Service branches.

DELCO PRODUCTS CORPORATION, DAYTON, OHIO



Style "O"
One of three models of utmost distinction

■

Each carries a

3½

Year Guarantee

STARR FREEZE Electric Refrigerators

BEAUTY

RELIABILITY

VALUE

Write for Our Liberal Dealer Proposition

THE STARR COMPANY
RICHMOND INDIANA

Small Town Dealer buys*
General Electrics
in carload lots

*Derby, Conn., population 10,970
(1930 Census)

GEO. E. BARBER, PREST. F. F ABBOTT, TREAS.

The Howard & Barber C
FURNITURE, CARPETS, DRY GOODS

Derby, Conn.

May 19, 1931.

Electric Refrigeration Dep't.
General Electric Co., Hanna Bldg.
Cleveland, Ohio

Gentlemen:

In Department Store Merchandising our troubles have been that many departments which we felt would be an advantage to us occasionally have been a disappointment, but we have been so satisfied with securing the agency of the General Electric Refrigerators as an additional department in our organization that it has been gratifying to us and I believe it will be of interest to you to know of the great satisfaction we have felt in having secured same through your Eastern Distributors, the Modern Home Utilities.

We find since opening this department that in a great many instances the customer was sold before coming in owing to the fact that they were familiar with different Electric Refrigerators and had sold themselves to your General Electric. This made it very easy for us in one way to complete the sale and secure the order. This has been caused many times by satisfied customers who are anxious that their friends secure a duplicate of theirs owing to their satisfied feeling with same.

We also feel that the co-operation received from you in advertising these with your window displays has also been a great help. It has brought many customers into our store, which we are always trying to stimulate, due to the fact that they wish to see this display on our floor, and they are tempted into other departments while being here.

We are in every way trying to Capitalize on the General Electric and believe you to be leading in Electric Appliances in this locality.

We wish you to know the satisfaction we have received since installing this department in our store and believe it to be one of the most profitable and desirable departments we have.

Yours very respectfully,

THE HOWARD & BARBER CO.

Frederick F. Abbott
Treasurer

FFA/PFC

THESE DEFINITE POINTS OF SUPERIORITY
BUILD GENERAL ELECTRIC SALES!

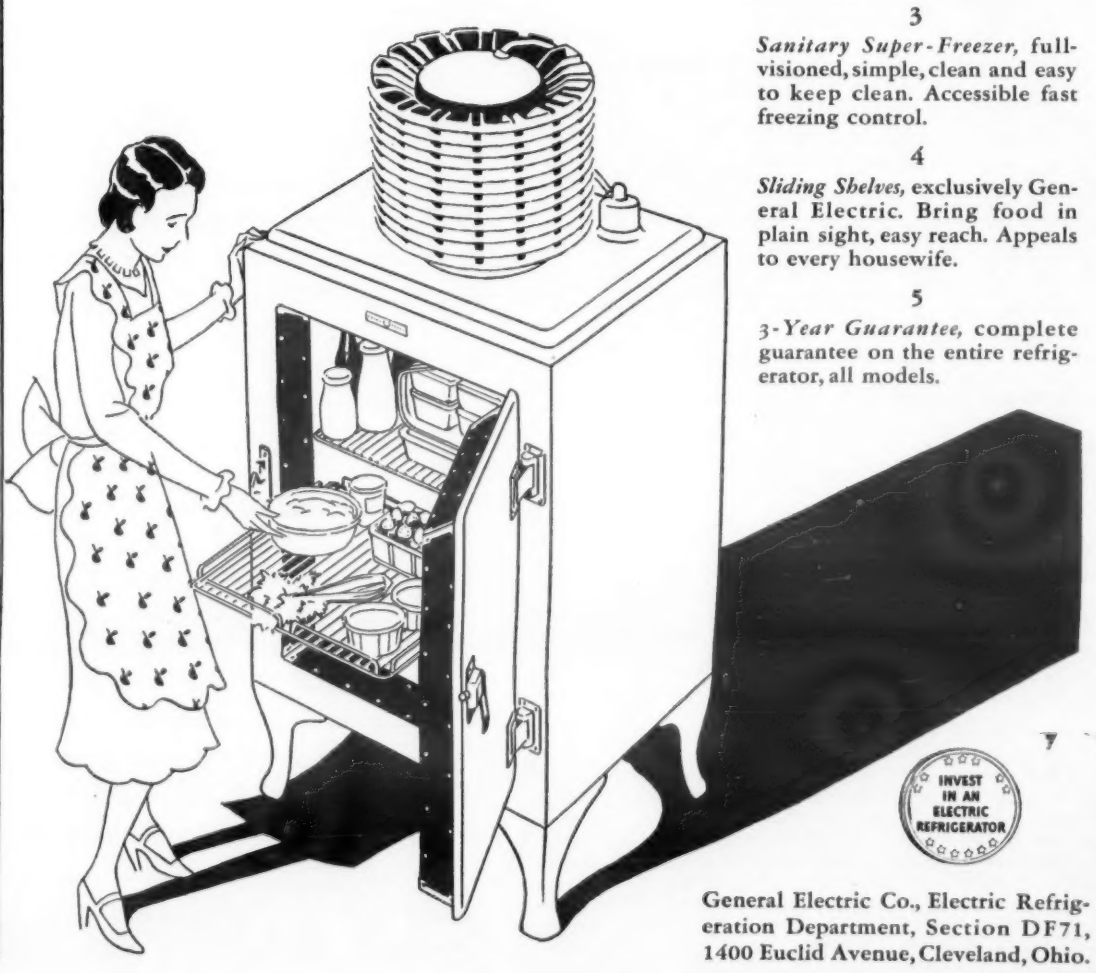
1
The Monitor Top, simple, current-saving mechanism sealed-in-steel, operating in a perpetual silencing bath of oil.

2
All-Steel Cabinet, clean, odorless, with extra storage space; acid-resisting porcelain interior.

3
Sanitary Super-Freezer, full-visioned, simple, clean and easy to keep clean. Accessible fast freezing control.

4
Sliding Shelves, exclusively General Electric. Bring food in plain sight, easy reach. Appeals to every housewife.

5
3-Year Guarantee, complete guarantee on the entire refrigerator, all models.



INVEST IN AN ELECTRIC REFRIGERATOR

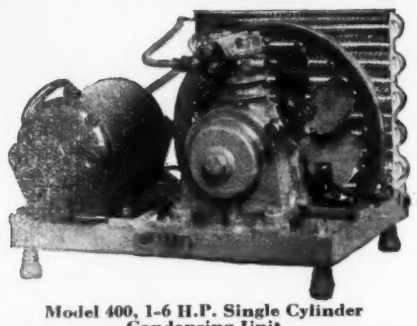
General Electric Co., Electric Refrigeration Department, Section DF71, 1400 Euclid Avenue, Cleveland, Ohio.

Join us in the General Electric Program, broadcast every Saturday evening, on a nation-wide N. B. C. network

GENERAL ELECTRIC
ALL-STEEL REFRIGERATOR

DOMESTIC, APARTMENT HOUSE AND COMMERCIAL REFRIGERATORS · ELECTRIC WATER COOLERS

DICELER
ELECTRIC REFRIGERATION
—PRODUCTS—
A SERVICE TO THE REFRIGERATION INDUSTRY



Model 400, 1-6 H.P. Single Cylinder Condensing Unit

PRECISION BUILT COMPRESSORS and COMPLETE CONDENSING UNITS
for Electric Refrigeration Manufacturers, Distributors and Dealers

Our plan allows the assembler to advertise and sell under his own name.
Sizes for 1/6, 1/4 and 1/3 H. P. Also commercial sizes up to 3 H. P. Air and water cooled.
Sulphur dioxide and methyl chloride condensing units.
Ideal for domestic refrigerators, ice cream cabinets, water coolers and small commercial installations.
Prices lowest in the history of electric refrigeration.
Full details given on request.

Deissler Machine Company
Greenville, Pa.
New York Office, 15 Moore Street
Manufacturers of complete domestic and commercial refrigeration systems

SERVEL DEALERS IN OHIO AREA APPOINTED

CLEVELAND—New dealers to handle the Servel Hermetic refrigerator in suburban territory have been named by the Cleveland Talking Machine Co., recently appointed distributor.

The new dealers are as follows: F. M. Smith Music House, Ashland; E. W. Seeman & Co., Galion; Van Gorder Hardware Co., Chardon; Middlefield Hardware Co., Middlefield; B. F. Fink Co., Willard; Fisher Music House, Monroeville; Max Mayer, Lorain; A. C. Burgess, Oberlin; Garrettsville Hardware Co., Garrettsville; Weber Hardware Co., Mantua; H. N. Umbarger, Mansfield; C. G. Miller, Plymouth; Falls Hardware Co., Cuyahoga Falls; Weber Hardware Co., Stow; Erie Radio Co., Erie, Pa.; C. A. Brown Music House, Titusville, Pa.; Bedford Hardware Co., Bedford; Brown Hardware Co., Berea, and the Hardware Supply & Coal Co., Chagrin Falls.

Only the domestic line is being handled by the new distributing organization.

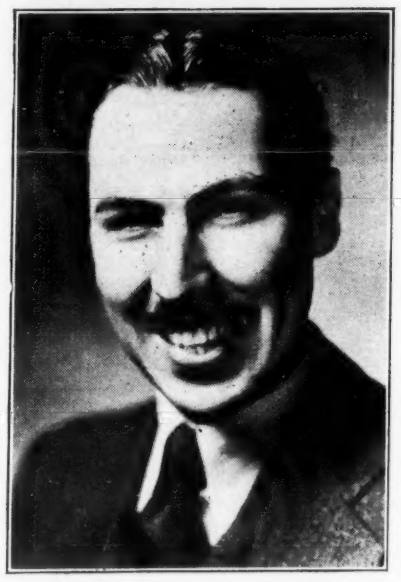
WAGGONER, WOODMANSEE ARE PROMOTED BY DISTRIBUTOR

SEATTLE, Wash.—R. V. Waggoner and H. W. Woodmansee were recently made managers of the commercial and domestic sales departments, respectively, of Harper-Meggee, Inc., Servel distributor for this territory.

Mr. Waggoner was with the commercial department of the company for a number of years, and since the addition of the Servel line, the department has been expanded and placed under his direction.

Mr. Woodmansee will have charge of domestic retail sales of the organization.

Director



RAYMOND RING
Dry-Zero sales manager, is directing distribution of dealer displays.

ICEMAN FURNISHES LEAD FOR WESTINGHOUSE SALE

KANSAS CITY—An iceman recently dropped in to tell Satterly & Blue, Westinghouse refrigerator dealers, how he had gotten the Manilla, P. I. radio station over his one-tube radio.

An enterprising salesman showed him a Westinghouse refrigerator, carefully explaining it in detail.

A few days later the iceman recommended an electric refrigerator to one of his customers and handed her name to the salesman, who closed the deal the first interview.

Ohio Workers Push Drive Above Quota

(*Concluded from Page 1, Column 2*)

chasers, Conn Dunn, new business manager, Cleveland, reported.

Mr. Dunn credited the high percentage of prospects sold to the fact that Ohio Public Service employes have been schooled in salesmanship during the course of many appliance campaigns.

It has been the policy of the company to give employes just a few sales aids, enough to enable them to readily tell prospects from "suspects." This plan, Mr. Dunn explained, has proved very satisfactory. When an employe turns in a name today it is that of a real prospect. The sales force is depended upon to close all sales.

Tom Kennedy, new business manager of Henry L. Doherty & Co., parent organization, and James M. Hatton, his assistant, came to Cleveland from the New York office for the meeting.

Two other Kennedys sat at the speaker's table.—Ted Kennedy, president of the Ohio Public Service Co., and H. H. Kennedy, regional sales manager of Frigidaire Corp.

Other speakers included the nine district managers, H. A. Cowgill, Port Clinton; Major C. W. Wilcox, Sandusky; Joy Herbert, Mansfield; Clyde Henderson, Alliance; O. H. Terrell, Warren; E. J. Berger, Lorain; J. B. Johnston, Elyria; S. R. Finley, Ashland, and O. C. Snabley, Massillon, and N. C. Foster, purchasing agent, Cleveland.

Highest honors went to O. C. Snabley, Massillon, whose organization sold 150 per cent of quota. Massillon, with slightly more than 10,000 electric meters of all kinds, today has 2,000 electric refrigerators. Highest salesman during the drive was John Schweitzer, Sandusky, who was awarded a wrist watch.

ELECTROLUX RETAILER BREAKS SALES RECORD

BROOKLYN—Appliance sales of the Brooklyn Union Gas Co. for the week ended June 13 reached a new high mark for the year in number of units when 685 appliances were disposed of, 302 at retail and 383 at wholesale. This latter figure is also a record weekly total.

During the record week 262 Electrolux refrigerators were sold at wholesale. This is the greatest number sold at wholesale in any one week for 1931, according to George F. B. Owens, domestic sales manager.

PRENTICE PRESENTS REPLICA OF MILLIONTH G. E. UNIT TO HOSPITAL

SEATTLE, Wash.—A replica of the one millionth General Electric refrigerator was made a gift to the crippled children of the Orthopedic Hospital of Seattle by Gordon Prentice, G. E. distributor in the Northwest.

The millionth refrigerator was displayed in Frederick & Nelson's large department store before it was formally presented to the orthopedic institution for children.

WE BUY
New and Used ELECTRIC REFRIGERATORS
In Any Condition
Phone, Write or Wire All Details, Type of Motor, Size of Box, Etc.
KASKEY & QUINN, Inc.
525 Arch Street Philadelphia, Pa.

ICEBERG
Condensing Units and Compressors for use with METHYL CHLORIDE
95 and 120 lbs. I.M.E. per day
Precision-Built
Simple in Construction
Efficient and Quiet in Operation
Write for Quotations
Iceberg Manufacturing Company
Gardner, Massachusetts
"One of the oldest manufacturers in U.S.A."

FRIGIDAIRE READY TO START 49-DAY DRIVE

(*Concluded from Page 1, Column 5*)

for door openers and handout purposes. It contains summer luncheon menus, and a number of recipes for hot weather dishes, including sherbets, ices and salads.

"The sales planning department worked with the field organization every step of the way in preparing our Fifteenth Anniversary Jubilee program," states Mr. Jamerson.

"It was first shown to a representative group of distributors at a factory meeting. It was then presented to all our distributing organization heads in a series of meetings.

"At these meetings, every district made a definite commitment covering the amount of campaign supplies to be used. All the troublesome details in connection with such an elaborate sales drive have thus been obviated, and those most directly concerned with promotional work can devote their undivided energies to following the campaign through to a successful conclusion."

Newspaper advertising, window display material, and other sales helps current during July and August will all tie in with the anniversary jubilee. Special radio programs, lobby displays, and other publicity will be utilized to call attention to the jubilee.

The following list of campaign managers, each with the rank of general

J. J. NANCE
Frigidaire sales promotion manager, fathered the jubilee idea.

and all reporting directly to H. C. Jamerson, chief of staff, has been assigned to duty during the jubilee celebration:

North central region: Grand Rapids, F. C. Matthews; St. Louis, J. C. Hambers; Indianapolis, C. S. Wheeler; Peoria, R. B. Cherry; Davenport, A. C. Blunk; Milwaukee, H. F. Lindsay; Chicago, H. W. LeValley.

New York region: New York, D. R. Lawrence.

Boston region: Boston, J. S. Pfeil.

Pacific Coast region: San Francisco, Geo. W. Shane.

Southeastern region: Miami, F. H. McDonald; Tampa, W. H. Forgy; Jacksonville, A. F. Eichenlaub; Louisiana, D. D. F. Yard; Carolina, H. W. Hayes; Georgia, L. W. Slack; Knoxville, P. D. Fuqua; Birmingham, L. C. Kerrick.

Central region: Dayton, M. A. Spayd.

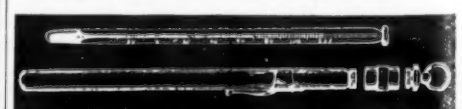
Southwestern region: Oklahoma City, J. H. Porter; Dallas, Ivan H. Wood; Houston, E. A. Blackburn; El Paso, F. L. Koons; Memphis, Rench Galloway; Ft. Worth, W. G. Jennings; San Antonio, A. L. Chavez.

Western region: Kansas City, R. D. Collier; Twin Cities, C. J. Bachman; Sioux City, H. A. Burkett; Omaha, L. J. Strain; Wichita, R. L. Wood.

HOOSIER CORP. PRESENTS G. E. UNIT TO HOSPITAL

INDIANAPOLIS—A replica of the millionth refrigerator made by the General Electric Co., finished in gold, has been presented to the James Whitcomb Riley Hospital for children by the Hoosier Electric Refrigerator Corp.

The formal presentation of the refrigerator was made at the luncheon meeting of the Indianapolis Kiwanis Club, which finished a wing of the hospital. The refrigerator will be installed in the Kiwanis wing.



A clear view easy reading thermometer—designed to give the utmost in instrument accuracy and dependability.
Easily interchangeable refill. Nickel plated brass case, not affected by brine.
Carroll Glass Instrument Co.

DON'T COMPARE C.I.T. SERVICE
with the ordinary "long range" finance service!

C. I. T. Service has this distinctive feature: it comes to you through a full functioning C. I. T. office in your territory . . . likely in your city.

No dealer has to be content now with receiving from a finance company just a bare money service. You are entitled to really effective cooperation where it is most needed—with credits and collections. But these tasks . . . so C. I. T. believes . . . call for the personal service of trained finance men on the ground and knowing local conditions.

We attach as much importance to our credit and collection services as to our strictly money service. That is why we have brought our men as close to you as your telephone, and why we urge you to let our nearest office serve you as if it were your own office, in the handling of all instalment detail.

C. I. T. Refrigerator Plans cover all models of all approved makes. Many of the country's most successful dealers use C. I. T. Service. Would you like to see what some of them have written about the part C. I. T. has had in building a profitable credit business?

THESE C. I. T. LOCAL OFFICES WILL WELCOME YOUR INQUIRY

Abilene ~ Akron ~ Albany ~ Allentown ~ Altoona ~ Amarillo
Asbury Park ~ Atlanta ~ Augusta ~ Baltimore ~ Beckley ~ Binghamton
Birmingham ~ Bloomington ~ Bluefield ~ Boise ~ Boston ~ Bristol
Bronx ~ Brooklyn ~ Buffalo ~ Butte ~ Camden ~ Charleston ~ Charlotte
Chicago ~ Cincinnati ~ Clarksburg ~ Cleveland ~ Columbia ~ Columbus
Dallas ~ Davenport ~ Dayton ~ Denver ~ Des Moines ~ Detroit ~ El Paso
Erie ~ Fort Wayne ~ Fort Worth ~ Fresno ~ Glens Falls ~ Grand Rapids ~ Green Bay ~ Greensboro ~ Greenville ~ Hagerstown
Harrisburg ~ Hartford ~ Hempstead ~ Hickory ~ Houston ~ Huntington
Indianapolis ~ Jackson ~ Jacksonville ~ Jamaica ~ Jamestown ~ Jersey City ~ Kansas City ~ Kenosha ~ Knoxville ~ Lansing ~ Lexington ~ Lincoln
Little Rock ~ Los Angeles ~ Louisville ~ Madison ~ Manchester
Memphis ~ Miami ~ Milwaukee ~ Minneapolis ~ Minot ~ Montgomery
Montpelier ~ Mt. Vernon ~ Nashville ~ Newark ~ New Haven
New Orleans ~ New York ~ Norfolk ~ Oklahoma City ~ Omaha
Orlando ~ Philadelphia ~ Phoenix ~ Pittsburgh ~ Portland, Me.
Portland, Ore. ~ Poughkeepsie ~ Providence ~ Raleigh ~ Reading
Reno ~ Richmond ~ Roanoke ~ Rochester ~ Sacramento ~ St. George
St. Louis ~ Salt Lake City ~ San Antonio ~ San Diego ~ San Francisco
San Jose ~ Seattle ~ Sioux Falls ~ South Bend ~ Spokane ~ Springfield
Spring Valley ~ Stockton ~ Syracuse ~ Tampa ~ Toledo ~ Tucson ~ Tulsa
Utica ~ Washington ~ Wheeling ~ White Plains ~ Wichita ~ Wilkes-Barre
Youngstown.

C.I.T. CORPORATION
ONE PARK AVENUE, NEW YORK
A Unit of
COMMERCIAL INVESTMENT TRUST CORPORATION
CAPITAL AND SURPLUS OVER $90,000,000
Subsidiary and Affiliated Operating Companies with Head Offices in New York
Chicago ~ San Francisco ~ Toronto ~ London ~ Berlin ~ Brussels ~ Paris
Copenhagen ~ Havana ~ San Juan, P. R. ~ Mexico City ~ Buenos Aires
Sao Paulo ~ Sydney, Australia ~ Offices in more than 160 cities.

● STANDARD RATING SCALE *for Electric Refrigeration*

● Is the refrigerator manufactured by a reliable company with proper experience in the electric refrigeration field?

● Has it plenty of food and shelf space?

● Is the cabinet itself well designed, sturdily built and properly insulated?

● Is there provision for the freezing of an adequate supply of ice cubes? (Quantity of ice rather than number of cubes, which may be of large or small size, should be taken into consideration.)

● Will the refrigerator constantly maintain a proper temperature for the preservation of foods?

● Can the freezing of ice cubes and desserts be speeded up when the need arises?

● Can this extra freezing speed for ice cubes be had without affecting the temperature on the food shelves? (Too low a temperature on the shelves will, of course, injure food.)

● Is there a place to keep meat, fish, game, "quick frosted" foods or extra ice cubes indefinitely at a *below* freezing temperature?

● Are these various temperatures (*a.* extra fast freezing; *b.* fast freezing; *c.* below freezing for storage; and *d.* normal food preservation temperature) *automatically* maintained *without any attention from the owner?*

● Does the refrigerating unit operate often or infrequently? (The fewer "stops" and "starts" the longer the unit will last and the less it costs to run.)

● How long will the cooling unit continue to cool the refrigerator, even though the current is shut off? (Refrigeration should continue for 10 or 12 hours.)

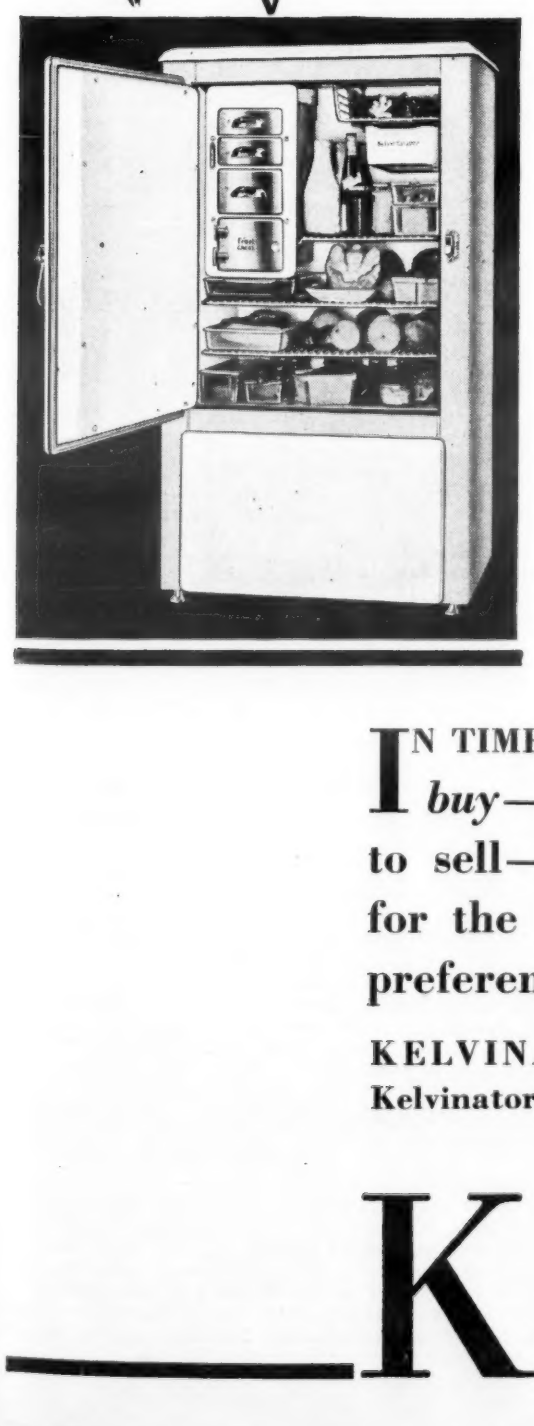
● Can the back parts of all shelves, even the lowest, be reached without kneeling or sitting down?

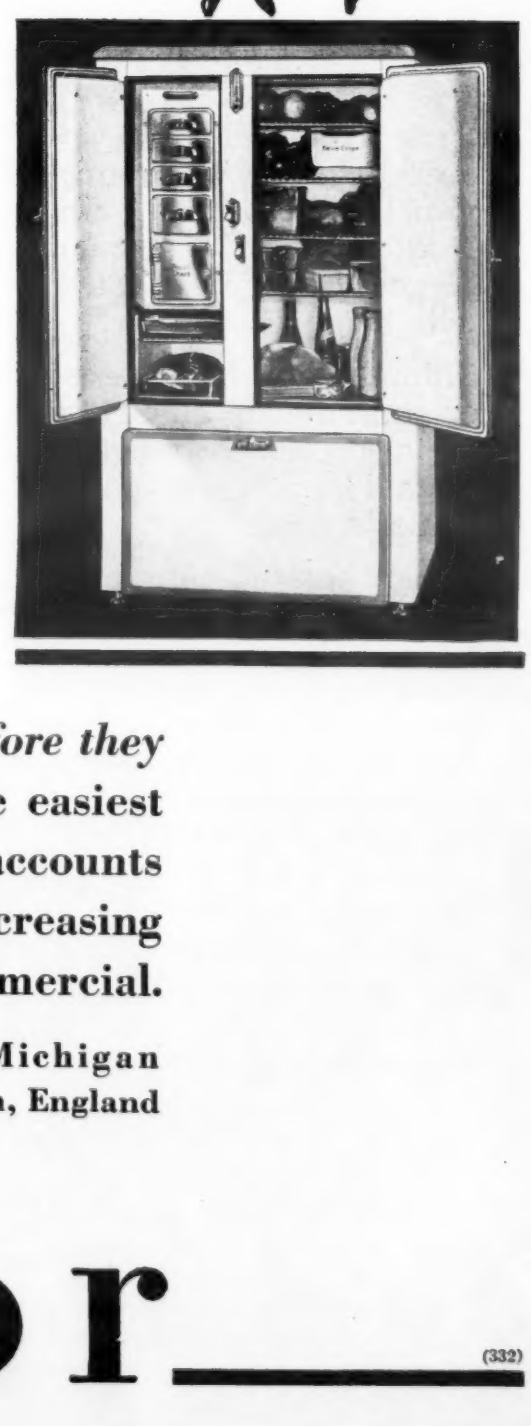
● Has provision been made for keeping vegetables fresh and crisp?

● Can the refrigerator top be used to "set things down for a moment" while the contents of the cabinet are being re-arranged?

● Will the refrigerator add to the attractiveness of the kitchen?

● Has the experience of users over a long period of years proved the refrigerator long-lived and dependable?





IN TIMES such as these—when people *think* and COMPARE *before they buy*—the merchandise which offers the greatest value is the easiest to sell—and by far, *the most profitable.* . . . Perhaps this accounts for the volume of Kelvinator sales — and the constantly increasing preference for Kelvinator Products, both Domestic and Commercial.

KELVINATOR CORPORATION, 14245 Plymouth Road, Detroit, Michigan
Kelvinator of Canada, Limited, London, Ontario Kelvinator Limited, London, England

Kelvinator

(332)

A New

LARMAC CARRIER

A Simple adjustment adapts it for use with any refrigerator

Universal model for any refrigerator

▲

SOMETHING DIFFERENT IN TRUCKS

▼

Note the ease in unloading
Loading is equally easy

Endorsed by Leading Refrigerator Manufacturers

Two men with a "Larmac" can easily deliver the largest household model

REDUCES YOUR DELIVERY EXPENSE
INCREASES CUSTOMER SATISFACTION

Write today for prices *Special discount to dealers*

LARMAC COMPANY
DAYTON, OHIO

Coast Distributor Prepares Organization For Servel Hermetic Activity

Sales staff of the H. R. Curtiss Co., Los Angeles, recently appointed Pacific Coast distributor for the Servel-Hermetic line. Top row, left to right: M. F. Ferrell, J. H. Foote, L. H. Price, C. F. Foote, manager of the Los Angeles branch; S. B. Curtiss, J. H. Buckingham and J. Griffin. Bottom row, left to right: New Van Metre, T. Boyd, K. W. Curtiss, L. F. Rielly, W. T. Wyatt, district sales supervisor for Servel, and Bent Davies. Throughout its territory the Curtiss company is building up its field force by the addition of dealers to handle the Servel Hermetic refrigeration line.

it IS a BIG YEAR with NORGE

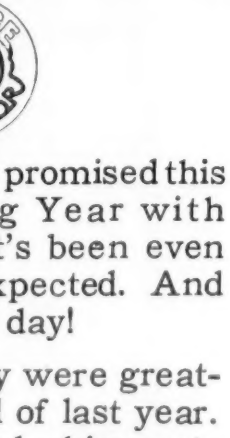
more Norge Electric Refrigerators were Sold in May than in all of 1930

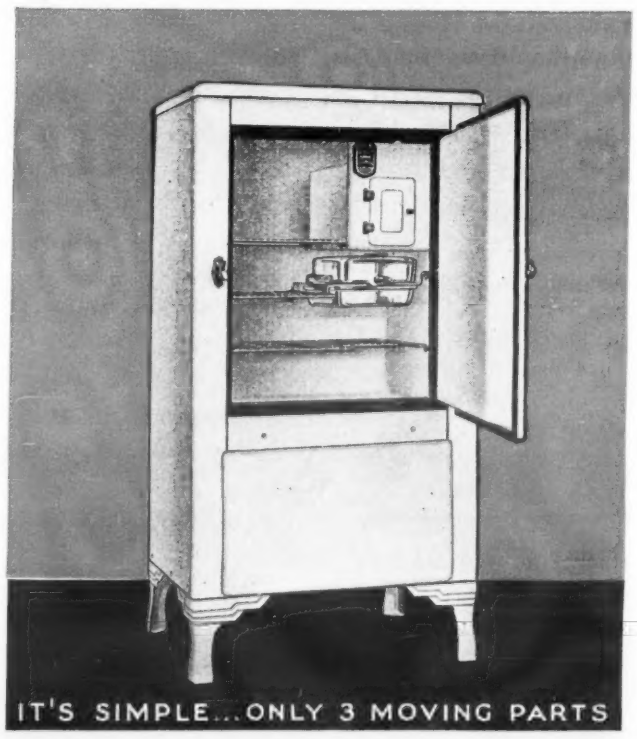
Last February we promised this would be a "Big Year with Norge." So far it's been even bigger than we expected. And gets bigger every day!

Shipments in May were greater than during all of last year. Retail orders absorb shipments as rapidly as they arrive in the dealer's hands.

Norge has the simplest refrigerating mechanism, the Rollator. With only three moving parts, almost everlasting, it makes the Norge a service free line for the dealer. And Norge is package merchandise, a short line, with a live, powerful sales and advertising plan assuring rapid turnover. Discounts are good.

THE ROLLATOR





IT'S SIMPLE...ONLY 3 MOVING PARTS

Hundreds of new dealers joined the ranks of Norge Profit Makers this year but some desirable locations are still available to the right men. The coupon will bring details.

NORGE CORPORATION Division of Borg-Warner
658 EAST WOODBRIDGE ST., DETROIT, MICH.
IN CANADA
NORGE CORPORATION OF CANADA, LTD.
235 Carlaw Ave., ◆ ◆ ◆ ◆ ◆ Toronto, Ont., Canada

Norge Corporation,
658 E. Woodbridge St., Detroit, Mich.
Gentlemen:
Please send me Norge Dealership information.
Name .....
Address .....
City ..... State .....

NORGE
WITH ROLLATOR

Kentucky Refrigeration Bureaus Set $9,500 Budget

LOUISVILLE, Ky.—The Electric Refrigeration Bureaus in operation at Louisville, Lexington and Pudacah will spend a total of $9,500 for promotional activities this year, according to W. H. Sadler, state director of the Electric Refrigeration Bureau.

At Paducah, five electric refrigeration dealers are participating in the campaign. E. P. Lewis, Frigidaire dealer, has been elected president of the bureau, and the other members are Rhodes & Burford (Kelvinator); Paducah Appliance Co. (Servel); and McLaughlin, Inc. (Majestic, Starr Freeze and Westinghouse).

This bureau will contact approximately 8,000 domestic electric consumers in Paducah and nearby towns. The activity is already well under way, and the envelope stuffers, tire covers, truck banners and window display materials prepared by the national bureau are in general use.

The Lexington Bureau, with a membership of seven dealers, will spend $850 for newspaper advertising. Plans for an elaborate show in the fall are being drawn up and are being supported by the Lexington Board of Commerce.

The members of the Lexington bureau are Sears, Roebuck & Co. (Coldspot); M. H. Moise Co. (Copeland); Sterling Hardware Co. (Frigidaire); Lexington Utilities Co. (General Electric); L. L. Roberts Furniture Co. (Majestic); Kentucky Sporting Goods Co. (Norge); and the Van Deren Hardware Co. (Servel).

Every refrigeration dealer in the city of Louisville is a member of the local Electric Refrigeration Bureau.

Robert Montgomery, general sales manager of the Louisville Gas & Electric Co., is president of the bureau, with E. J. Nellor, A. H. Thompson and Tom Williams comprising the finance committee.

A budget of $8,100 was raised for the Louisville activity, and the sales quota was set at 4,051 units.

The Louisville bureau is being operated under the sponsorship of the Louisville Electric Club, Inc., and is receiving the full cooperation of that body, which is made up of refrigeration dealers, utilities and contractors.

Through the medium of gas and electric bills the bureau has distributed approximately 85,000 envelope stuffers.

A program of newspaper advertising is being carried on, involving an expenditure of approximately $4,500. A billboard campaign is being conducted, and radio programs are being carried on over the two local broadcasting stations.

In the early part of June a complete showing of all the makes of electric refrigerators sold in Louisville opened for four days. The show was held at the Exposition Hall at 420 Market St., and all members of the bureau participated.

The *Courier-Journal* and the Louisville *Times* sponsored the show, which is to be the first of a series of annual refrigeration exhibitions. A. H. Thompson, Frigidaire dealer, was chairman of the show, and the other members of the committee were Tom Williams of the Tafel-Williams Co., Westinghouse distributor, and George Buechel of the Sutcliffe Co., Norge distributor.

Aside from the three principal bureaus in Kentucky, activities are being carried on in about 50 other towns in the state. The Kentucky Utilities Co. has distributed 50,000 envelope stuffers in towns that it serves electrically, aside from the distribution at Lexington, Paducah and Louisville. Approximately 150,000 domestic consumers have already been reached by the bureau activity.

Materials, such as tire covers, truck banners, window displays and counter display easels have been provided dealers in the following towns by the Kentucky Utilities Co.:

Pineville, Harlan, London, Norton, Lebanon, Springfield, Stanford, Somerset, Winchester, Richmond, Wilmore, Carlisle, Shelbyville, Elizabethtown, Leitchfield, Central City, Princeton, Earlington, Dixon-Clay, Corydon, Fulton, Morehead, Middlesboro, Cumberland, Williamsburg, Appalachia, Campbellsville, Danville, Harrodsburg, Cynthiana, Mt. Sterling, Lancaster, Paris, Versailles, Glasgow, Franklin, Greenville, Beaver Dam, Marion, Morganfield, Sturgis, Paducah, Maysville, Augusta, Carrollton.

WALTER JOHNSON PRESENTED REPLICA OF MILLIONTH G. E. UNIT

WASHINGTON, D. C.—A General Electric refrigerator was the center of interest at the Washington baseball park a few days ago.

The occasion was the presentation of a replica of the one millionth refrigerator produced by General Electric to Walter Johnson, manager of the Washington Baseball Club.

The presentation was made by E. C. Graham, president of the National Electric Supply Co., distributor in Washington for the General Electric line. After the exercises the refrigerator was delivered to Johnson's home and installed

GEORGE HEADS REORGANIZED DISTRIBUTORSHIP

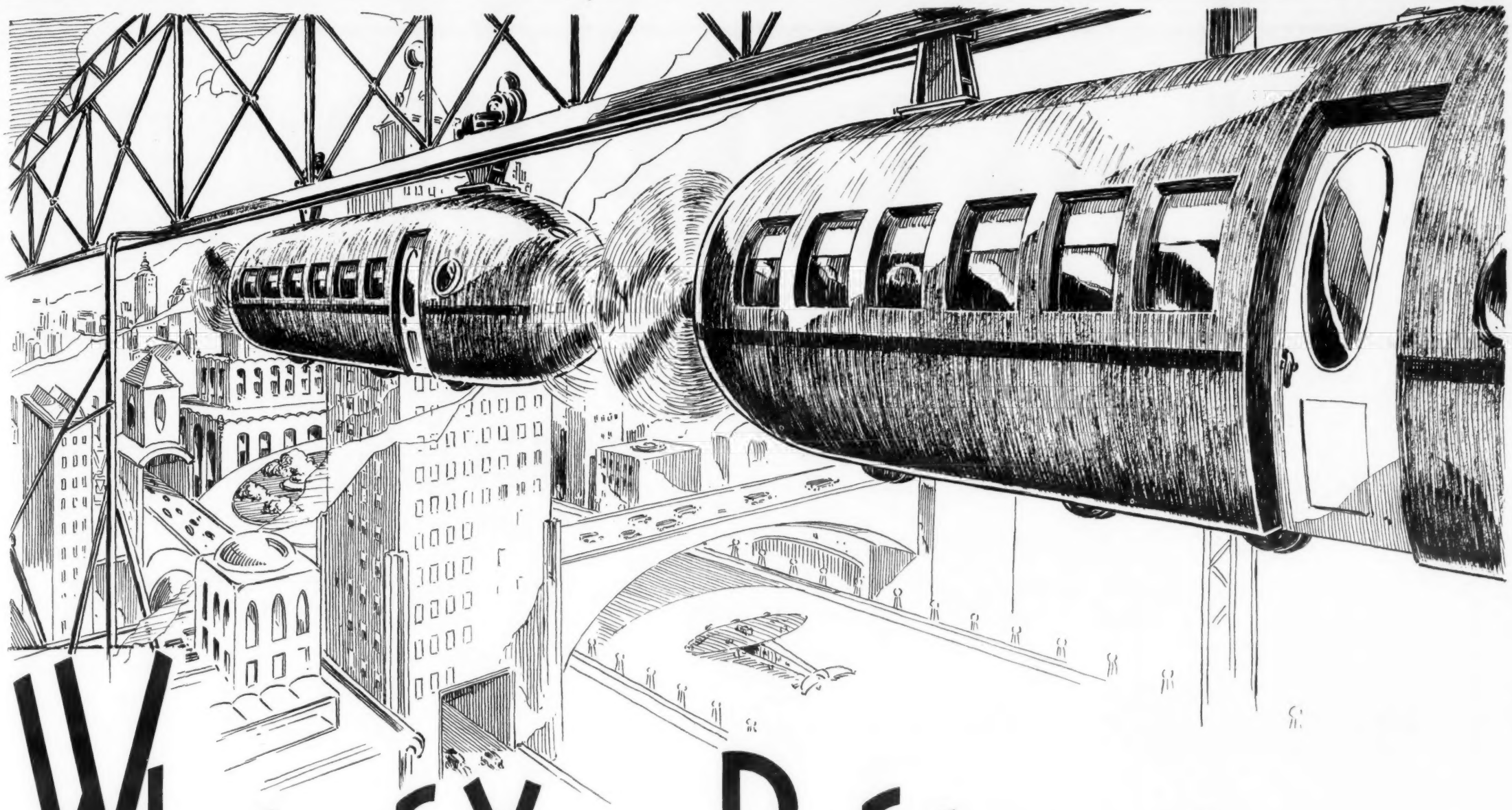
KANSAS CITY—The Servel Larkin Refrigeration Co. was reorganized a short time ago with J. B. George as president; Gilbert L. May, vice president; Albert T. Wood, secretary-treasurer and manager. Twenty-four dealers have been signed up by the company.

The company is handling both commercial and domestic electric refrigerators.

GRINNELL TAKES STARR FREEZE AGENCY IN TOLEDO

TOLEDO, Ohio—Representation for the Starr Freeze line of electric refrigerators in this city has been taken over by the Grinnell Bros. Music House.

The Toledo store is managed by Tom Taylor, with the refrigeration department under the direction of Herbert Grinnell.



What of Your Refrigerator—

Measured by the Standards of a New Era?

When a new generation has taken over control . . . when amazing new inventions dwarf our present scientific achievements . . . when a whole new set of standards measures the product of today, how will your 1931 cabinet rate in the scale of performance?

With summer in the kitchen all year round, quality insulation in your refrigerator will keep out heat as efficiently then—as now.

Foresighted builders of good cabinets are taking precautions NOW to use the most permanent insulation available—Dry-Zero Pliable Slab, as insurance of efficient performance through a lifetime of service. Dry-Zero has permanent efficiency. It will not crack, settle or deteriorate, it has a unique aversion to moisture. Impartial authorities have established that Dry-Zero is the most efficient commercial insulant known, and this fact is now accepted without question by refrigerator engineers.

By today's standards or those of a new era, Dry-Zero renders the highest service obtainable from any refrigerator insulation.

DRY-ZERO CORPORATION
Merchandise Mart - Chicago, Illinois
Canadian Office - 465 Parliament Street, Toronto

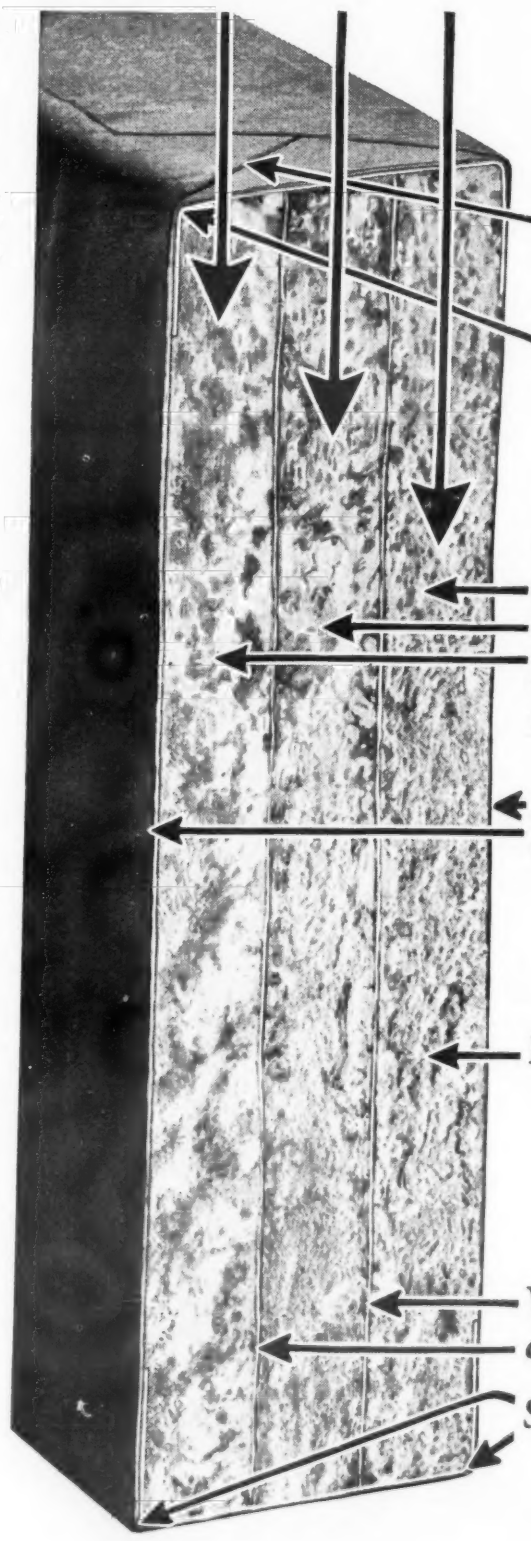
DRY·ZERO
THE MOST EFFICIENT COMMERCIAL INSULANT KNOWN

This SUPERIOR

Gives you plus heat-stopping

Standard with lead
Nationally advertised

Completely filled with full size sheets of standard Balsam-Wool


Careful sealing—held with strong, waterproof, odorless adhesive
Rigid angle edge re-inforcement (Pat. applied for)
Completely filled with full size sheets of standard Balsam-Wool—positive assurance of value and permanence.
Strong, waterproof, sealing wrapper
Balsam-Wool mat
Waterproof liners on standard Balsam-Wool
Sharp, true corners

AMERICA'S leading manufacturers, producing more than 80 per cent of the country's domestic mechanical refrigerators, are extensive users of Balsam-Wool insulation . . .

These great firms have adopted this superior insulating material because it assures them far *more* than the unexcelled heat-stopping efficiency which Balsam-Wool provides.

In addition to this vitally important quality, Balsam-Wool continues to enjoy a wide and ever-increasing public acceptance . . .

Years of consistent advertising in leading national magazines, reaching the better class of American homes, has made the *buying* public well acquainted with the real merit of Balsam-Wool . . .

Merit based on definite points of superiority that do not change! Merit in actual use which has brought it larger sales every year for eight years!

Balsam-Wool Sealed Slabs—made to any length, width, and thickness—withstand long service

BALSAM-WOOL

R INSULATION...

lu<u>s values</u> in addition to unexcelled
pping efficiency for refrigerators

●

leaders in the industry . . . Public preference . . .
ertised to the buying public... A Weyerhaeuser product

duc- without collapsing under "vapor pressure."

mes- Rigid enough for easy handling. Flexible enough rs of to fit snug. Hermetically sealed, waterproof. Balsam-Wool Sealed Slabs will not settle under vibration, will not sift down.

erior far ency lity, ever- na- s of well ol... ority has ears! ngth, rvice

In the illustration at the left

COMPARE

the features of Balsam-Wool Sealed Slabs

We are so confident of the outstanding qualities of Balsam-Wool, we invite manufacturers—interested in improving the quality of their cabinets—to make their own service tests and *prove* to themselves that Balsam-Wool Sealed Slabs have all the essential requirements of superior insulation.

Year after year—this has been our standard sales policy in connection with Balsam-Wool Sealed Slabs

The average thermal conductivity of Balsam-Wool does not exceed .25 B. T. u. per square foot, per inch thickness, per hour, per degree Fahrenheit temperature difference.

And finally—refrigerator manufacturers realize that Balsam-Wool is a product of the skill and resources of Weyerhaeuser—an organization noted for its honest dealing, with a record of more than 70 years of progressive manufacturing experience ...

Twenty great lumber mills; kraft, newsprint, and book paper mills; railroads; steamship lines, and allied activities of this great organization stand side by side to confirm the responsibility of the makers of Balsam-Wool—*true insulation.*

WOOD CONVERSION COMPANY

Mills at Cloquet, Minnesota

Industrial Sales Offices: CHICAGO—360 N. Michigan Ave. NEW YORK—3107 Chanin Bldg. DETROIT—515 Stephenson Bldg. SAN FRANCISCO—149 California St.

SEALED SLABS

PARKER COMPRESSORS
SINCE 1899

SULPHUR and METHYL 1-6 HP to 3 HP
AMMONIA 1 HP to 50 HP

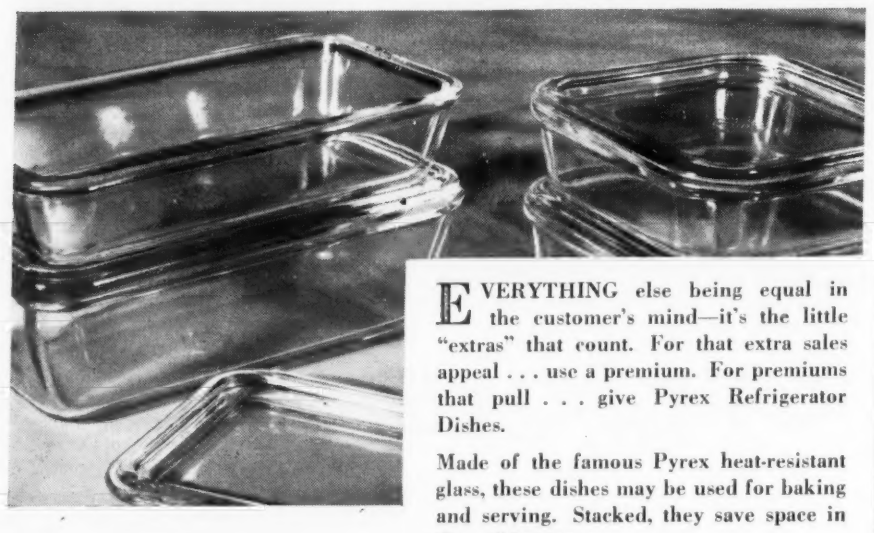
For Immediate Delivery to Manufacturers

Hiram L. Fowler
15 Moore St.
New York, N. Y.

Herb C. Parker
2600 Santa Fe Ave.
Los Angeles, Calif.

STOCK CARRIED AT BOTH POINTS

Give these dishes . . *they help clinch the sale*



EVERYTHING else being equal in the customer's mind—it's the little "extras" that count. For that extra sales appeal . . . use a premium. For premiums that pull . . . give Pyrex Refrigerator Dishes.

Made of the famous Pyrex heat-resistant glass, these dishes may be used for baking and serving. Stacked, they save space in the refrigerator.

They retail for as little as 85c . . . set of four, $4.40. Get them from your jobber or write to Corning Glass Works, Corning, N. Y.

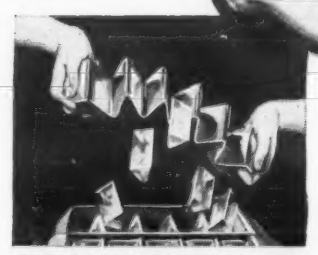
PYREX
REFRIGERATOR DISHES
Trade-mark "Pyrex" Reg. U. S. Pat. Off.

Make Salesmen of Your Service Men and Extra Profits for Yourself With

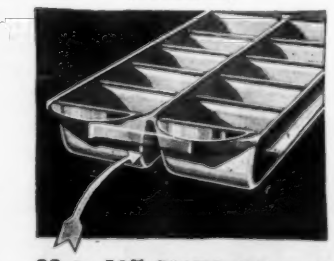
Easy-Out
ALL-METAL TWIN ICE TRAY

MAKES ICE BARS . . . . .*Not Cubes*
OUT IN A JIFFY without holding under water
20% TO 50% FASTER FREEZING . . .

FOR ALL POPULAR REFRIGERATORS



OUT COMES ICE IN A JIFFY
Pressing on the end flaps loosens the grid from the tray. After the grid is lifted out, flexing the grid frees the ice bars. You need not turn out entire contents of tray every time you need ice.



20 to 50% FASTER FREEZING
The patented "twin tray" feature exposes more metal to the refrigerant and cools the water from all sides. This makes it possible for the Easy-Out to freeze water 20% faster than other metal trays and 50% faster than composition trays. Fine for frozen desserts.

Here is an accessory that's made to order for your service men to sell. Easy-Outs are easy to sell to present owners of your refrigerators. And you can sell them as equipment on every new unit.

Discounts permit a generous commission for your service men or salesmen and leave you a good profit percentage. Easy-Outs require no service. Once sold they *stay* sold—and they attract other owners of refrigerators to your store to buy.

Send in $1 for a trial tray. Ask about the Special Introductory offer we are making for a limited time. Write today. Be the first to show the Easy-Out in your locality. It's the coming sensation!

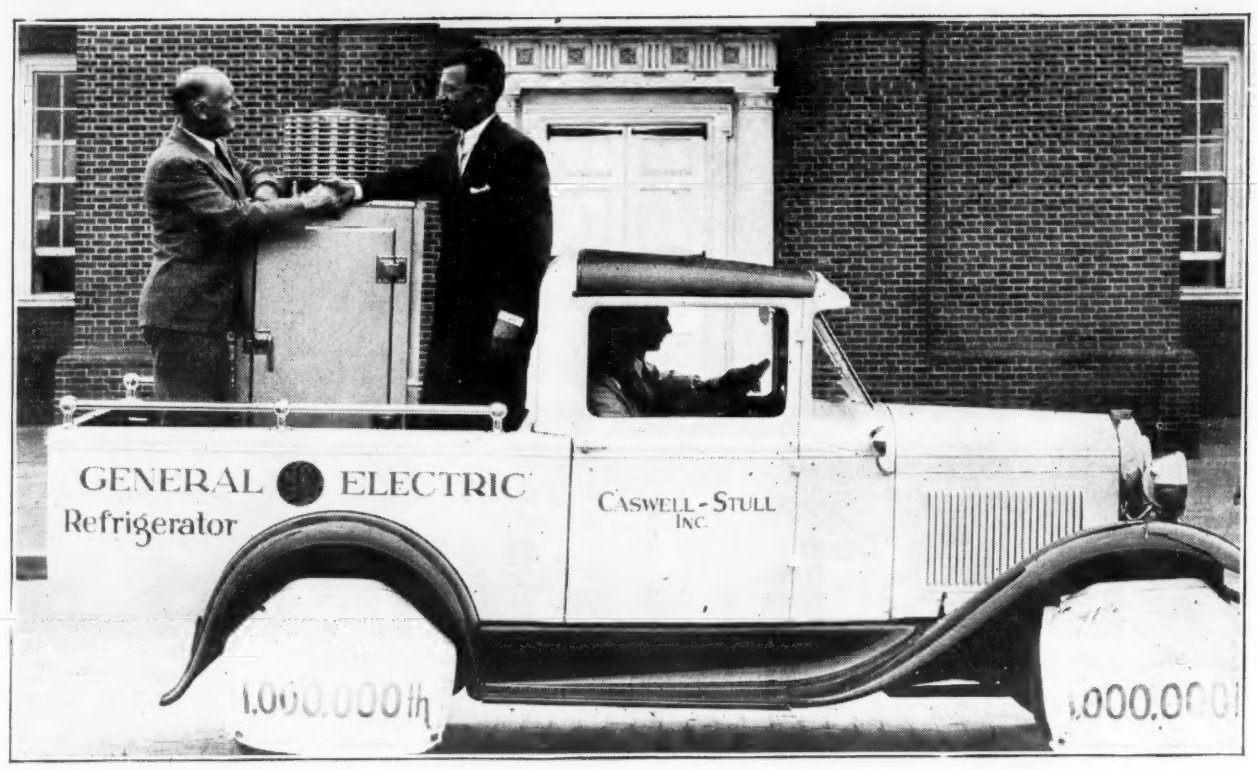
REFRIGERATION ACCESSORIES DEPARTMENT OF

McCORD
RADIATOR & MFG. CO., DETROIT, MICH.

COUNTER DISPLAY FREE!
With every order for ten or more Easy-Out trays, this attractive counter display, in full color, will be sent free of charge. This display sells the Easy-Out through words and pictures and provides a sample tray that your customers may try.

INTRODUCTORY TRIAL OFFER
To introduce the Easy-Out, all merchants who write us on their business stationery as proof of bona fide interest will be sent any size Easy-Out tray for $1. This offer is limited to ONE TRAY per merchant. Give the name of the refrigerator and model you wish to try the tray in. Further information and discount lists will be sent to you with the trial tray.

Caswell-Stull Moves Millionth G. E. Unit to New Home



S. C. Caswell (left), and C. H. Stull making delivery of the millionth General Electric refrigerator to the Henry Ford Museum at Dearborn, Mich., after a special parade through the streets of Detroit.

CLARK AND JONES REMODEL SALES QUARTERS

BIRMINGHAM, Ala.—The store of Clark and Jones, Kelvinator distributor, has been completely remodeled.

Formal opening was held recently at which ice cream and other refreshments were served.

Exports of Refrigerators

April Shipments Reported by the Bureau of Foreign and Domestic Commerce

April, 1931	Electric Household Refrigerators Number	Electric Household Refrigerators Value	Electric Commercial Refrigerators Up to 1 Ton Number	Electric Commercial Refrigerators Up to 1 Ton Value	Parts for Electric Refrigerators Value
Austria	22	$ 1,965	52	$ 5,434	$ 3,772
Belgium	1,929	322,837	169	29,487	26,968
Czechoslovakia	...	...	23	2,982	2,164
Denmark	104	8,578	69	8,465	8,526
France	187	20,323	186	19,919	31,842
Germany	203	17,864	235	25,369	20,011
Gibraltar	5	1,296	...	...	...
Greece	...	...	...	...	98
Irish Free State	18	1,447	19	2,307	852
Italy	24	2,975	27	3,652	9,514
Latvia	3	265	...	...	133
Netherlands	56	4,929	119	24,684	8,781
Norway	85	8,865	34	4,754	5,650
Portugal	49	15,711	...	...	149
Spain	125	26,964	7	838	6,727
Sweden	153	13,200	58	5,856	10,834
Switzerland	249	22,690	90	10,911	10,209
United Kingdom	480	72,369	134	14,238	43,016
Canada	2,762	311,361	582	92,899	144,973
Costa Rica	8	1,801	1	488	65
Guatemala	1	171	...	...	245
Honduras	...	...	...	...	28
Panama	27	4,804	...	...	1,053
Salvador	6	1,128	...	...	676
Mexico	252	39,435	24	7,049	3,055
Newfoundland and Labrador	7	1,015	3	1,214	698
Bermudas	26	3,436	...	...	481
Jamaica	...	...	2	429	...
Trinidad and Tobago	5	999	1	143	12
Other British West Indies	3	454	1	181	275
Cuba	353	56,050	8	1,169	2,705
Dominican Republic	9	1,077	...	...	...
Netherland West Indies	1	144	1	245	497
Haiti, Republic of	4	542	1	121	129
Argentina	66	7,283	1	299	2,826
Brazil	33	4,133	8	1,995	2,912
Chile	3	275	...	...	...
Colombia	62	12,230	...	...	97
Ecuador	2	228	...	...	43
Peru	3	425	7	842	583
Uruguay	...	...	...	...	317
Venezuela	56	9,639	3	826	216
Aden	3	576	1	146	50
Arabia	5	486	...	...	...
British India	145	15,272	5	679	3,298
British Malaya	25	3,310	...	...	750
Ceylon	10	1,518	5	1,585	394
China	133	17,868	12	1,454	175
Java and Madura	7	714	...	...	247
Other Netherland East Indies	19	2,923	...	...	32
French Indo-China	41	5,776	...	...	120
Hong Kong	54	9,367	1	353	49
Japan	244	42,993	32	6,249	1,256
Philippine Islands	100	14,394	7	2,046	2,797
Siam	...	...	...	...	326
Syria	2	197	...	...	...
Turkey	15	2,307	...	...	658
Australia	...	...	...	...	289
New Zealand	10	1,276	...	...	703
British East Africa	27	3,779	...	...	105
Union of South Africa	132	18,129	3	713	3,726
Gold Coast	...	...	...	...	58
Other British West Africa	4	852	...	...	...
Egypt	19	2,778	...	...	488
Algeria and Tunisia	163	15,650	13	1,436	2,574
Other French Africa	1	280	...	...	...
Morocco	38	4,641	13	2,165	2,156
Mozambique	1	172	...	...	15
Canary Islands	8	1,381	...	...	...
Total	8,567	$1,165,547	1,957	$283,622	$371,398
Shipments to Hawaii	119	18,149	29	5,822	2,176
Porto Rico	138	26,141	1	114	1,970

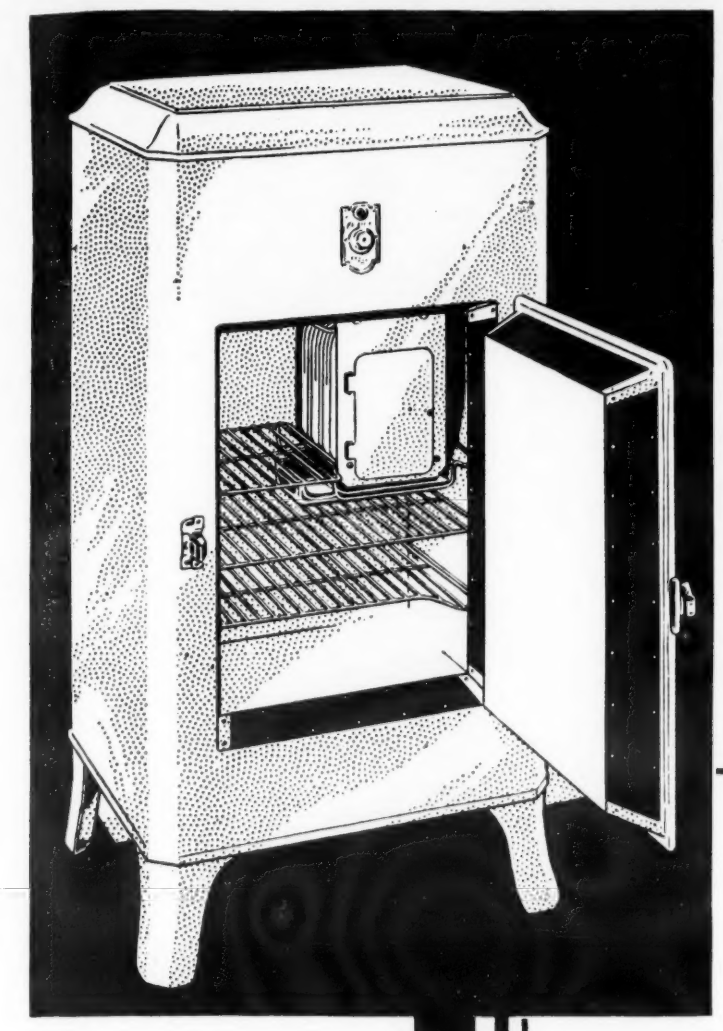
STERLING RADIO AVERAGES CARLOAD A DAY IN JUNE

KANSAS CITY—The Sterling Radio Co. here, was supplied with a carload of Majestic refrigerators every working day in June.

H. E. Dreier, advertising manager and treasurer of the company, reports that the new model 140, a four cu. ft. box, has helped sales.

ELECTROLUX NAMES ST. LOUIS SUBURBAN DEALER

UNIVERSITY CITY, Mo.—The General Appliance Sales Corp. will serve as Electrolux dealer for the suburban St. Louis area. It will operate in the counties of St. Louis, St. Charles, Jefferson and Franklin, outside of St. Louis city, which is in the territory of the Laclede Gas Light Co.

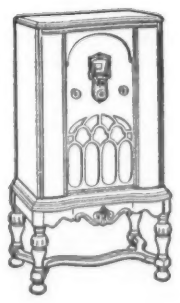


Made in 3 sizes, with 7¼, 8½ and 10 square feet of shelf area. All have Pyroxalin Lacquer exterior finish, Porcelain-on-Steel interior, Positive Air Circulation feature, Hermetically Sealed Unit and 26 other great features.

MIGHTY MONARCH
OF THE ARCTIC

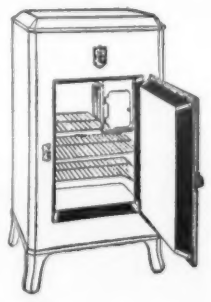
Value!

...Secret of the success of Majestic



The spectacular success of Majestic in the radio set manufacturing business was based definitely upon giving the public quality of the highest type at the lowest prices at which a quality article could be produced. This Majestic accomplished by modern methods of purchase, manufacture and merchandising.

Now Majestic has brought its highly developed methods and experience to the refrigeration field and gives to the American housewife *all* essential and desirable features . . . with finest construction . . . at prices all can afford to pay. Success here has been so rapid that even Majestic's huge plants are, at the moment, oversold. Dealers interested in a fast-moving, very-profitable summer item should communicate with the nearest Majestic distributor.



GRIGSBY-GRUNOW COMPANY, CHICAGO, ILLINOIS

Makers of

Majestic

RADIO and REFRIGERATOR

MERCHANDISING SECTION ELECTRIC REFRIGERATION NEWS

The Business Newspaper of the Refrigeration Industry

Published Every Two Weeks by

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Sales Contests

MEN in authority who are wrestling with the all-important problem of stretching out the selling season of electric refrigerators far into the fall and winter are acutely conscious of key positions held by the dealer and by the salesman in their organizations.

It is merely uttering a commonplace to say that production is not one of the industry's major worries, and that the biggest job to be done is that of securing homes for all of the machines which the industry is equipped to make. Commonplace or not, the observation still holds true.

And solution of the difficulty, many will agree, lies in figuring out methods of inspiring salesmen to continue their spring order-getting spurts through the latter half of the year, and of demonstrating to dealers that redoubled efforts this fall will pay good dividends.

One answer to the riddle is that of staging sales contests. This answer is almost as old as the problem itself. Age seems to have no effect on its practicality, however. That executives still put faith in its efficacy is denoted by the fact that most of the leading organizations are now conducting campaigns of some sort or another.

Frigidaire is making capital of its fifteenth anniversary to put on a jubilee campaign. Typical of this well-controlled and finely regimented organization, the fifteenth anniversary jubilee contest will assume the aspect of a military campaign, with as many officers as a Mexican army, a complete system of reports in true military style, and as many opportunities for strategy and planned attacks as a platoon of generals could want.

Norge has just announced its first nation-wide sales contest, one built around the theme of the "marathon rollator" which has been running so long at the Norge factory. This contest seems to be designed not only to provide rewards for diligent efforts during the coming months, but to sell the sales organization on the merits of the product they are merchandising.

The "battle of the cities" is now being waged among the various distributors of Kelvinator electric refrigerators. This contest, which adds civic pride and home-town loyalty to the potent motive of fealty to one's own personal leaders, brought good results last year.

Still in progress is the General Electric "transcontinental blimp race." This contest has been given an added push recently by the publicity attendant to the manufacture of the millionth G. E. refrigerating machine. G. E. salesmen are now wearing neckties which proclaim their selling achievements during the week, with a golden necktie, emblematic of the gold-hued millionth unit, representing the highest stratum of success.

In all of these contests, larger commissions or merchandise prizes provide an incentive for extra effort. Perhaps equally important is the sporting element of such "games."

Salesmen are natural-born sportsmen. Otherwise they would not work on a commission basis, which means gambling on themselves and on the product they are representing. They love a competitive fight, and one way to keep them from expressing this urge in terms of fighting competitive products (instead of selling their own machines) is to start them battling among themselves in a friendly struggle for personal supremacy.

Furthermore, devices of this sort enable the salesman to see himself in the picture. At such times he becomes the most important cog in the company's machine. If he gets enough orders, he will be honored by the president of the parent concern, and will be held up as a model to other salesmen.

That the salesman deserves and needs such spotlighted attention will be gainsaid by few men who have ever trod the long, dusty trail of doorbell ringing and frequent rebuffs. Anything which can help the salesman preserve his ego and maintain his morale under the constant fire brought upon him by the nature of his job is surely a worthy undertaking.

Still another reason why many manufacturers continue to look upon sales contests with such favor is that they keep the minds of dealers and salesmen trained upon the company they represent, and its products.

When summer brings its lethargy, and when the seasonal let-up in activity comes along as usual, a reaction to the faith and loyalty of spring is entirely possible. Dealers begin to check up on the results they have had with the line they are handling, and salesmen begin to recapitulate their efforts, and look a bit upon the greener pastures which always seem to lie on the other side of the fence. It is no time for the manufacturer to slack up his promotional efforts.

If he has a good story to tell, if he has a good product to sell, he will cut down the wastage of dealer turnover by holding and centering the attention of his organization upon the merits of the product and company to which they are attached.

Whether the method be contests, a new scale of commissions, stepped-up promotion plans, or novel attention-getting stunts, the important thing is to magnify the dealer and his salesmen, inspire increased efforts, and bind them more closely to the home organization.

On Our Bookshelves

"MORE PROFITS FROM ADVERTISING"

Authors: Kenneth M. Goode and Carroll Rheinstrom. Publisher: Harper & Brothers, New York City. Publication date: 1931. Pages: 275, with index. Price: $3.50.

Here is an advertising book for Scotchmen. "For every man who spends an advertising dollar," reads the jacket More properly, it is for every man who wants to see five dollars roll back for each one he spends on advertising. Coming at an opportune moment, written by two nationally recognized authorities, and containing some eminently practical suggestions on the business of making advertising profitable, "More Profits from Advertising" deserves a heavy sale and extensive reading.

It is not by beauty alone that we should judge advertising, the authors argue, but by results. Advertising for profits, and not art for art's sake, should be the real purpose behind all layout and copy, they are so bold as to declare. Moreover, they have facts and figures to back up their implication that many advertising men don't know a "pulling" advertisement when they see one. It is even hinted that the less artistic of advertisements are the most effective.

At any rate, the authors suggest, don't trust your own judgment on an advertisement, or that of your art department, your wife, or the members of your club. The only way to know is to test. And this book presents several set-ups for testing, together with some of the rules of the game.

Messrs. Goode and Rheinstrom get down to bed rock when they say that the most important thing to know in preparing advertisements is the human animal, and how it reacts. "The one thing all advertising men should know best, they generally know worst. People. What they look like. Where they live. And how. How they think. What they think about. And when!"

It's pretty hard to quarrel with that sort of thinking.

When advertising men have studied their audiences more diligently, they are likely to discover that they have been designing their ads for a very thin upper stratum of readers, the book predicts. The astonishingly literal and unliterate (not illiterate) mind of the American public to which the large "national" media go, and which forms the real market for most of our nationally advertised commodities, cannot cope with the subtlety and refinement of a great deal of modern advertising, the authors maintain.

"These people may be mildly interested in your factory tests. They will even read how Mrs. Vandergrift uses your product. . . . They will be mightily interested in how Mrs. Bricklayer or Mr. Plumber of North Church street made out. Talk Union Square—not the Plaza. Talk the Subway—not the taxi. Talk the Bronx—not Bronxville."

Most important of all considerations in designing advertisements is the ego of their readers, their desire to enhance their self-importance. Not how good your product is, but how your *prospect* can improve his position by owning one. Say the writers: "Set your music in the key of 'I'."

Such practical suggestions as checking to see whether the publication carrying your advertising has high-pressure-sold circulation, or is bought because its readers really want it, are in every chapter.

The style is bouncing, crisp, and as lively as a puppy dog. Devices such as the placing of an anecdote at the beginning of a chapter, split sentences, jazzed punctuation, hints of what's in following chapters—while obvious, and occasionally squeaking for want of the oil of transition—help get the effect the authors desire to produce.

Refrigeration Bureau Booklet

"COOPERATIVE ELECTRIC REFRIGERATION EXHIBITS"

Publisher: National Electric Light Association, New York City. Pages: 28. Price: $0.30. Publication Date: 1931.

TWENTY-EIGHT pages crammed with suggestions and pictures relative to the desirability and procedure of holding local cooperative electric refrigeration exhibits comprise a new booklet issued by the Electric Refrigeration Bureau of the Commercial National section, National Electric Light Association.

Tracing briefly the growth of these exhibits, the booklet states that they have now become recognized as essential to broad local promotional programs.

It continues by saying that cooperative exhibitors have not as their primary air that of persuading great numbers of people to order electric refrigerators at or during the exhibit. Rather, the purposes are first educational, and secondly, to gain a goodly number of good live prospects.

So important do the writers consider advertising of cooperative electric refrigeration exhibits, that they hasten to insert an emphatic word of advice on that subject even before they have drawn their introduction to a close.

"Take it as a foregone conclusion," they say, "that you cannot secure satisfactory attendance unless you advertise well before and during the exhibit."

In outlining the advantages of these exhibits, the booklet points out that they enable more people to see electric refrigerators than would ever go to a shop for the purpose of inspecting a single make.

They promote better understanding of the various advantages, break down sales resistance, establish good will, foster acquaintanceship between competing outlets, and take off the keen edge of competition which often cuts at the root of constructive promotion.

Furthermore, say the writers, such exhibits have the economic advantage of making a mass appeal, where a single dealer would be powerless to attract certain prospects.

The cooperative activity extends the interest and creates opportunities to draw more people per exhibitor and per dollar of cost. Expenses are pooled, thereby cutting down overhead.

The larger total budget makes possible a more intriguing display, more important attractions in the way of entertainment, and more thorough advertising.

Following this section of the booklet, there comes in rapid-fire sequence section after section of detailed advice as to making the most important of the multitudinous arrangements necessary for a successful exhibit. There even appears a chart showing a model system of organizing exhibit officials and workers.

Some of the meatier bits of counsel are herein contained:

Hold your exhibit in some locality that is centrally convenient. Don't crowd your hall or your booths; make your decorations simple and dignified; colors should be dark and cool, with the lighter shades in the foreground to place emphasis on the white refrigerators.

Show reasons for placing certain foods—fresh, when possible—in specific places in the cabinet. Make lights good but not glaring. Provide comfortable seats. Advertise by newspaper and direct mail; through architects, builders, and women's clubs; over the radio; on show cards and banners; and through wise distribution of complimentary, but not free to all, tickets. Secure good entertainment. Secure household experts for the exhibit if possible. Provide for the visitors' comfort.

Not least important in the booklet is a warning to salesmen to be fair in their arguments, and to be clean competitors with the forces of other concerns represented at the exhibits. But the best policy, says the publication, is to do no selling at the exhibit, but rather to devote all energies to follow-up transactions after the close of the affairs.

The booklet's last 10 pages deal with typical examples of recent exhibitions held in the United States, and give, in brief, plans upon which the shows were based. The writers advise neutral organizations in all cities, where such exhibits are at all possible, to strive to bring all competing electric refrigerator companies together to make cooperative refrigeration exhibits a reality there.

Letters From Readers

Our Ears Must Have Deceived Us

Chicago, Ill.

Publisher:

I am enclosing an affidavit dated May 22, 1931, signed by Deputy Inspector Gerald Gearon, which quotes verbatim, statements published by you, attributed to him and his denials under oath.

E. G. HITT,
Secretary, Chicago District Ice Association.

COUNTY OF COOK,)
STATE OF ILLINOIS.) S. S.

Personally, appeared before me, Raymond B. Oakley A Notary Public for County of Cook, State of Illinois, Gerald Gearon, Deputy Chief Inspector, Department of Steam Boilers, Unfired Pressure Vessels, and Cooling Plants of City of Chicago, who on oath deposes as follows: that in a publication known as Electric Refrigeration News, published on March 11, 1931—pages 1 and 19 there appeared the following:

"The suit has two purposes according to Gerald F. Gearon of the Boiler Department, who will direct the reply of the City Administration to the suit. To secure a reduction of the $20.00 inspection fee for each compressor, over 50 tons capacity, which the bill charges, is unreasonable, excessive, and exorbitant, is the first purpose.

"The second purpose of the suit Gearon believes is to embarrass the Electrical Refrigeration Industry."

And in its issue of May 6th, 1931—the following statement appeared on page 2:

"Gearon, who will direct the City's defense against the suit believes that the bill is meant to embarrass the electric refrigeration industry, as well as to attempt to get lower inspection fees for ice plants."

Affiant further states no such statements as published by said Electric Refrigeration News were made by him.

Gerald Gearon.

Sworn and subscribed to before me this 22nd day of May, 1931.

Raymond B. Oakley,
NOTARY PUBLIC.

A Hot Idea for Cooling

Springfield, Mo.

Editor:

Here's an "air conditioning" system for you. In traveling through Springfield here I found a local restaurant in which the basement had become too hot for comfort, and the proprietor had improvised the following air conditioning method.

A block of ice was strapped to the bars outside the basement window, and an electric fan arranged inside the window to suck in air over the melting ice, thereby cooling the basement. When I first saw it, a large chunk of ice was doing duty; and about four hours later I passed and saw it considerably diminished in size, and small boys breaking it up to eat. The store manager reports a consumption of 25 lbs. of ice in four hours.

S. R. COOPER,
Servel Corp., Evansville, Ind.

Kind Words Department

Editor:

Of the 12 different trade papers I have taken, you beat them all. You cannot improve it one bit—gives you the proper news, easy to file away, takes no room on your desk, and best of all, can be carried in part or whole in your pocket to read on train or at home.

Several months ago I wrote the Virginia Smelting Co., asking them if they would send me the name of papers published for the refrigeration trade. They wrote back, "The ELECTRIC REFRIGERATION NEWS is the best paper published," and I am of the same opinion.

HARRY O. PUFF.

More or Less Dept.

I would like to see less news about: General Electric—T. A. Ollila, Detroit, Mich.

I would like to see more news about: General Electric—Edwin J. Hoeger, Mendota, Ill.

Copeland—J. Geo. Fischer & Sons, Saginaw, Mich.

Norge—W. A. Spinks, Memphis, Tenn.

Copeland—Peoria Home Appliance Co., Peoria, Ill.

Frigidaire—N. L. Bradford, Harrisonburg, Va.

Majestic—D. A. Chase, South Sioux City, Nebr.

Individual installations. More distributor and dealer news and less utility news.—W. R. Zacharias, Allentown, Pa.

More News About:

Sales plans and sales organizations.—J. W. McReynolds, Kokomo, Ind.

F12, General Motors refrigerant—B. F. Wood, Des Moines, Iowa.

Help Wanted—Henry Steinhaus, Chicago, Ill.

CLEVELAND MAJESTIC CO. AUGMENTS DEALER FORCE

CLEVELAND—The Majestic Distributing Corp. has augmented its dealer force in this city through the addition of the following agencies:

Aldrih-Howey Co.; Atlas Stores; Bailey Co.; Bing Co.; Brown Bros.; Buescher Music Co.; Colonial Furniture Co.; Coyne Furniture; Euclid Music; Halle Bros.; Mayer-Marks Co.; May Co.; Newman-Stern Co.; Sterling & Welch Co.; Sunnyline Electric Co.; Wm. Taylor & Co., and the Rudolph Wurlitzer Co.

Altman Furniture Co.; Benesch-Federman Co.; Basta Music Store; Center Furniture; Central Furniture Co.; Frank Cerne; Doan Electric Co.; Griffin Radio; Gates & Allen; Hartman Furniture Co.; Heights Electric Co.; Kurtz Furniture; Laudro Jewelry; Liberty Electric; Mandel Hardware Co.; Joe Meszaros; J. Monreal Co.; Nook & O'Neil Co.; Paragon Music Co.; Ptak's Music Store; R. & L. Radio Service; Smerda Bros.; Snow Bros.; Vincent-Barstow Co.; Wanda Furniture Co.; A. Wank Electric Co.; Weiss Bros.; Yusko Hardware, and the Young Furniture Co.

LIQUID COOLER ANNOUNCES NEW DISTRIBUTORS

DETROIT—New distributors for Temprite coolers have been named in several cities during the past few weeks by the Liquid Cooler Corp. They are: the J. E. Dilworth Co., Memphis, Tenn.; Central Hardware and Factory Supply Co., Akron, Ohio; Howard C. Baker Co., Toledo, Ohio; all Kelvinator distributors, and Bright and Co., Reading, Pa., a Servel distributor.

The Hallman Electric Co., a dealer under Neches Electric Co. at San Antonio, is now handling Temprites in San Benito, Tex.

Seven Apartments Buy Systems

LOS ANGELES—Forty-three cabinets were placed by Holbrook, Merrill & Stetson in an apartment house at 1775 N. Orange Drive, this city, all of which are operated by two compressors. Other installations by this company during May included 24 units in the apartment house of Judge Avery on West 23rd St.; 27 units at 376 S. Burlington; 29 units for Carrie M. Syring, West Eighth St.; 32 units at 5537 La Mirada; 27 units for Jack Lipman at 711 S. Westlake, and 29 units for Peter Otis at 2520 West Seventh St.

Practically all of these installations, according to John L. Gerrick, manager of the apartment house division, were in old apartment buildings.

CHAMBERLAIN TO CONTACT DEALERS IN COAST AREA

SEATTLE, Wash.—E. H. Chamberlain has been named dealer supervisor of the Kelvinator division of the Standard Furniture Co., according to B. Wilhelm, general manager of the division.

DENVER UTILITY SELLS 920 UNITS IN SIX MONTHS

DENVER, Colo.—Some 1,950 apartment house kitchens in Denver are now equipped with Kelvinators, according to James M. Eakins, manager of the refrigeration department of the Public Service Co. Commercial installations number about 400.

Sales for the first half of 1931, Mr. Eakins states, were 31 per cent over the same period of 1930. Nine hundred and twenty machines have been sold this year in Denver alone, totalling $200,000 worth of business.

In cooperation with one of Denver's newspapers, the company held a cooking school in the Broadway Theater, at which a Kelvinator was given away free. Approximately 7,500 persons attended the four-day school.

CHARLESTON MUSIC STORE TAKES DEALERSHIP

CHARLESTON, S. C.—The Seigling Music House, one of the oldest music houses in the state, has taken representation in this city for the Westinghouse refrigerator.

TODAY'S RESULTS TO YOU MUST BE PROFITABLE

At no time in the past twenty years of history of Electrical Refrigeration Merchandising have such liberal and attractive policies been available until the advent of

KULAIR

which created entirely new standards of Distribution, Quality, Price and Capacity in the Sulphur Dioxide and Methyl Chloride field, with all sizes of Compressors and Condensing Units. Important enhancement of enthusiasm and establishment of retail customer confidence in KULAIR clientele selling over private brand names will apply to your establishment with an efficient and cumulative profit result.

IT IS FOR YOU TO PUT THIS PLAN TO WORK TODAY

Write to

KULAIR CORPORATION PHILADELPHIA, PA.

NOW

Mr. Refrigerator Salesman, here's an appeal to men

Watch "Believe-It-Or-Not" Ripley's cartoon illustrations and copy about flexible rubber freezing trays in The New Yorker, Collier's, National Geographic, Vogue, Vanity Fair, House Beautiful, House & Garden, and other national magazines.

A man rarely goes to a refrigerator except for ice—then he wants it in a hurry. When he's giving a little party and goes out to get ice cubes, he abominates hammering at an ice cube tray or being splashed with water. He'll appreciate getting the ice cubes as easily as the ginger ale. He pays for the refrigerator and he'll see the point of the flexible tray instantly! Demonstrate this modern ice cube convenience—it will help you close many a sale of a new refrigerator.

Cash in on this flexible rubber freezing tray advertising campaign! Get full information about these new and modern trays either from the manufacturer of the refrigerator you sell or direct from us. Write today.

THE INLAND MANUFACTURING CO.
Dayton, Ohio

Flexo Tray
Patented and Patents Pending — Reg. U. S. Pat. Off.

ICE CUBES THE MODERN WAY

Simplified Refrigeration

Now the **BIG ONES**

★

Servel Hermetic Dealers: Ask your distributor now about plans for the "free trip to the factory."

★

Prospective Refrigeration Dealers: If you too are interested in Simplified Refrigeration wire us for the name of the nearest distributor.

★

SERVEL SALES, INC.
EVANSVILLE, INDIANA
A complete line of household and commercial refrigeration

The SE-9 *nine cubic feet of storage space with de luxe features and custom styling.*

Hermetically sealed unit . . . No kitchen repairs . . . No intricate adjustments . . . No replacement of parts . . . Fewer moving parts . . . No moving parts exposed . . . Costs less to operate . . . Quietest electric refrigerator . . . Handy temperature control . . . More usable shelf space . . . Beautiful, graceful cabinets . . . Flat, usable top . . . No installation problem.

SERVEL HERMETIC comes in all sizes

The next advertisement in the Servel consumer series appears in the July 11 Saturday Evening Post. Watch for it!

Little Stories of Interesting PEOPLE In the Refrigeration Industry

THE EXPANSION VALVE

Little Stories of Interesting IDEAS In the Refrigeration Industry

By George F. Taubeneck

Golf vs. Ice Cubes

Our train hadn't eaten up many miles before everybody in the coach knew that the Assertive Guy knew all about the Depression and what should be done about it, where Hoover had made his mistake, what the Government should do about Wall Street, why we should attack Russia immediately, how selling really should be done, and why everyone else was wrong about everything.

The Assertive Guy knew all the answers to all the problems. He admitted it. And only a stone-deaf person could ride peacefully along without hearing the Assertive Guy's opinionated pronunciamentos.

Seated with him was an accomplished Me-Too man. Facing the bull-voiced man and his echo was a mild-mannered fellow who might have had a few words, but didn't get a chance to use them.

Finally the A. G. ran out of breath and out of topics. Signs of relief came from many quarters of the car. But the Me-Too man, liking the sound of His Master's Voice, pulled out the A. G.'s conversational ace and mentioned golf.

It was like giving a Communist a soapbox, a gasoline flare, and a ready-made crowd. The Assertive Guy was off—in a cloud of adjectives.

Like others of his ilk (you know the tripe) the A. G. went directly to the point. He demanded to know just why the mild-mannered fellow didn't indulge in the royal Scottish pastime, and looked belligerently ready to quash whatever alibis might be offered.

Ably assisted by the Me-Too man, the A. G. gestured and stamped and puffed. But somehow the mild-mannered fellow remained unconvinced.

This unexpected opposition seemed as amazing and disconcerting to the Assertive Guy as would the attempt of a recruit Frigidaire salesman to sell his first job to Col. Frank E. Smith of Servel. He changed his blustering tactics.

"Of course I allus say," he averred, "that there's other things in life as comes before golf. But I'm tellin' yuh, see, that it's a great thing. Now I'm not one of these birds what just lives for golf, see, but I play it because it improves your health, and because it's helpful to your business.

"Golf teaches you, uh, sportsmanship; and, er, uh, fair play; and, uh, honesty. It brings out the best that's in you, that's what it does, and that's why it's helpful in business.

"Now you take any group of important men. Show me a single one of 'em what doesn't play golf. Show me, I ast yuh, just show me one." A pause, then triumphantly: "Yuh can't do it, cause there ain't any."

As an aside to the Me-Too man, he added, expansively, "I don't know whether we play golf to get to become important, or whether after we become important we just nacherally turn to golf!"

No so easily vanquished, however, was the mild-mannered fellow.

"But I don't want to play golf," he protested. "I'd rather use the money you fellows spend for memberships and dues and balls on something for our home.

"Now you take that electric refrigerator we just put in. Why, my wife and I get more fun out of that dingus than we would out of a dozen golf courses.

"On Sunday afternoon I take my paper and a book out in the back yard, and read, and dream a bit, all the while a-sippin' cold drinks with nice big ice cubes in them, and boys, I wouldn't ask to be any happier."

The Assertive Guy snorted, but the speaker held the floor.

"And then along later in the afternoon," he went on, "Nellie comes bringing out some new fangled dessert she's made in that refrigerator, and she looks like Columbus discovering America. And then I take a bite and relax some more, and . . ."

"Tiffin!" bawled the conductor. "Tiffin."

The triad picked up bags and decamped to the tune of the Assertive Guy's:

"Now, John, I don't want you to think I'm tryin' to run your affairs, see, but if you'd only been around the Mohawk course as many times as I and my wife, you'd see where you was all wrong," etc., etc., etc.

Tiffin, Ohio, papers please copy.

* * *

Frigidaire in Retrospect

On the front page of this section is announced the Frigidaire fifteenth anniversary jubilee. Those who have watched Frigidaire grow during that 15-year period have an interesting story to tell.

The first chapter of that story was written in a small factory located on the fourth floor of a building on Twelfth street, Detroit. Equipment consisted of two lathes, a shaper, a hand milling machine, a drill press, a tool grinder, and a few small tools.

With this equipment, six months were required to build the first 20 machines.

Sulphur dioxide used in charging the first machines was dried in a still fashioned from three quart bottles procured from a drug store. This still was used until the spring of 1919.

When the infant outgrew these quarters, the manufacturing operations were transferred to the Delco-Light Co. plant in Dayton, where farm-lighting plants were made for the General Motors organization. That was in 1919.

It was not long thereafter until the Frigidaire Corp. was created as an independent subsidiary of General Motors.

In 1926 Frigidaire carried through a factory expansion program which, when completed, gave it 53 acres of factory floor space, five miles of conveyors, the largest porcelain enameling plant in the world, and a great deal of special machinery.

At the same time it launched one of the industry's first national newspaper advertising campaigns, using 2,000 daily papers.

What Frigidaire did from this point on is pretty generally known throughout the industry. From 20 units in six months to a capacity of many thousands a week is quite a jump, and needs no further comment.

* * *

Westinghouse

Not long ago we noted that all Frigidaire executives, whether engineers, publicists, or whatnot, seem to be first-class salesmen. They belong to the jovial, sophisticated, convincing class of men who sell themselves as well as their product.

We observed, too, that the outstanding characteristics of General Electric headquarters men were youth and abounding energy. Servel officials are friendly, unaffected, and born travellers.

The Williams home organization is made up of a troupe of men who are at home behind the footlights, who can put on a good show, and make rousing speeches at a moment's notice.

At Westinghouse refrigeration headquarters in Mansfield, the dominant note is quietness—if quietness can be said to be dominant, and surely it can. Quiet strength. Concealed potentiality. Unostentatious competence.

In the last issue we stated that Carl Taylor, boss of the outfit, is a laconic individual who can usually put his finger on the heart of a subject in the first or second sentence he utters.

He wastes no words, and has an economy of movement as well. Strength, to be sure, but he does not exhibit his biceps.

His cohorts seem to reflect the same studied, calm, temperate frugality of speech and moderation of action. Plenty of looking is done before the leaping—if any.

Typical of these is Ralph Gates, who now bears the elongated title (also typically Westinghouse), of assistant merchandising sales promotion manager, whose poise and unruffled even temper is mirrored in his starched, correct clothes.

He travels the even tenor of his way, never allowing himself to become stampeded into anything before he has weighed the proposition's merits to his entire satisfaction, rarely becoming excited, yet infusing into his work a well-regulated current of enthusiasm.

Gates is tall, has curly hair, and a hint of a smile which plays constantly upon his lips. His understudy, Frank Elias, newly brought on from the Chicago office, adds an appearance of ample, flowing energy to the Westinghouse cool serenity.

Most quiet of all is Paul Thrush, editor of *Cold Selling Talks*. At his fingers' ends, however, is a pile of interesting facts and stories about Westinghouse sales activities afield.

An undercurrent of activity which almost amounts to an air of tenseness pervades the Westinghouse headquarters just now.

When passing down the lanes of glass-partitioned offices, one sees conference after conference. The men are talking earnestly—but so quietly that two conferences are often held in the same office without conflict.

Whether or not this active undercurrent portends anything yet remains to be seen. Perhaps it is just the regular Westinghouse tempo. Its air of mystery, however, is intriguing.

* * *

Henry Ford

There was something breathless about going to see Henry Ford.

In my comparatively brief reporter's span I had met, talked with, and written about such celebrities as Fritz Kreisler and J. A. Harlan, Aimee Semple McPherson and Sam Vining, Babe Ruth and Henry Burritt, Gilda Gay and Mike Mahoney, Robert A. Millikan and Fremont Wilson, John Dewey and Dr. Arnold H. Kegel.

Surely another great personage was nothing to cause the loss of composure. Yet all day before the Occasion I was as fluttery and abstracted as a girl on the eve of her first big "prom."

To my secretary, to the shop foreman, to a friendly soda jerker, and to many others I can't remember just now, I mentioned—in as casual and off-hand manner as I could muster—that I was "going out to see Henry Ford tonight."

The effect of the name was magical, and the saucer-eyes that my remark invariably provoked did little to restore my self-confidence. Apparently meeting Henry Ford was like being presented at the Court of St. James.

It was one of those rare Big Moments in which the realization fully lives up to the anticipation. It was an adventure for me, even though my part consisted solely in watching him broadcast a message over a microphone. It was—and this may surprise you—an adventure for Henry Ford.

After it was all over, he said that it was as much fun as anything he ever did. And somehow one believed him. For that is one of the magic qualities about the Miracle Man of Dearborn. To him, life is a series of adventures.

His is the philosophy of Change, his God is Progress, and his Holy Grail is Experience. Which explains why his mind is so fresh, so youthful, so unshackled.

It also explains why a man who has built up a vast industrial empire, who has retained absolute control of a mighty business, who has amassed the biggest pile of wealth in this wealthiest of all nations of all time, and who has, above all, preserved his INDEPENDENCE to an amazing degree, can still find life adventurous.

The contrast between Ford and Floyd Gibbons, who was to introduce the human symbol of mass production to a radio audience, was like that between an electric motor (Ford), and a steam engine (Gibbons).

They sat facing each other in a glass-partitioned office, a large desk between them. Ford leaned far back in his chair, and seemed to be resting, although one could sense the electrical energy caged within his slight frame. Gibbons, who has the reddest face I've ever seen, almost smothered the table.

In a light summer suit, crisply pressed, Ford looked cool. Added to that impression were his smooth silver-tinged hair, his high forehead, lean jaw, and keen blue eyes—of which more later.

Gibbons, on the other hand, perspired like a farm-hand at haying time, took off his dark coat, loosened his tie and collar, and looked as uncomfortable as those who sit on the speaker's platform at Fourth of July celebrations.

Over and over Ford read to himself the printed card which bore the message he was to speak over the radio. Then he pushed his glasses up on his forehead, smiled, and engaged Gibbons in conversation.

At last Gibbons was signaled to begin. He grasped the microphone in his left hand, and held a typewritten sheet in his right. Caressingly he spoke into the "mike," which he held very close to his mouth.

His face worked convulsively. He gestured as if his audience could see him. All in one breath and movement he finished his speech and bowed sweepingly to Mr. Ford.

The parent of Models T and A leaned forward, took a stance before the microphone, cleared his throat, and began delivering his message in a high, even voice.

Occasionally he would hunch his shoulders, or flap his right elbow against his side. He finished with a sunburst of a smile for Gibbons and the newsreel camera man.

"Still" pictures were to be made, and Ford posed obligingly with Gibbons. When standing he appeared a bit stooped.

Gibbons did most of the talking. Ford listened, his expressive countenance reflecting the progress of Gibbons' stories.

Although restless, he kept still enough that one could notice the deeply furrowed lines in his face and the sagging flesh underneath his magnetic eyes.

When he interrupted Gibbons to express an idea of his own, he talked with sparing, graceful gestures, which moved along with his speech, like one of his famous production lines, toward a definite point, winding up with an air of finality which seemed to be evidence that his point was conclusive.

Perhaps the most remarkable of Ford's visual characteristics, aside from his utter cleanliness and neatness, is his pair of deep blue eyes—as penetrating as Roentgen rays, and as fathomless as the sea.

At times they glisten, and again they glow with a smouldering fire which can unsuspectedly burst into a blaze of discernment.

It's hard to erase the memory of those eyes from one's mind. They are the eyes which SHOULD belong to Henry Ford—a man who has insight, foresight, and hindsight.

* * *

William Lyon Phelps

Prof. William Lyon Phelps, known as "Billy" to the thousands of students who have listened to his English lectures at Yale, and to denizens of Michigan's backwoods, spoke before the twenty-fourth annual meeting of the American Home Economics Association last Thursday night.

Many of his listeners were home economics directors for electric refrigeration organizations.

Phelps was slated to give an address on "Family, the Foundation." He didn't give an address at all—just chatted. He was as delightfully informal with an audience as a man whom he somewhat resembles, John Erskine, author of the *Private Life of Helen of Troy, Adam and Eve, Galahad,* and other tales.

Wearing a thin-fabric blue suit without vest, he was dressed for the weather, not for the women. A loosely tied cravat flapped against a white, soft-collared shirt. Rimless glasses with gold trimmings were the only hint of the pedant about him. His face and hands were healthily browned, in pleasing contrast to his plentiful white hair.

"First the home, then good books," Phelps told the home economics women. "It's better to read trashy books than none at all—substitution of the good for the poor will come with time.

"In spite of the radio, talking pictures, and automobiles, a greater thirst exists for reading now than ever before. . . . If you would solve the problem of child training easily, give your children the right books to read, imbue them with the reading habit, and then watch the results."

The war horse of the Yale English department got his biggest laugh when he stopped in the middle of a sentence, looked up at the balcony, where a radio man was removing two amplifiers, and shouted: "What in the devil are you doing?"

Phelps maintains he can never get used to pajamas. He says he feels like Mark Twain who, when he first tried them, said it seemed as if he had gone to bed with his pants still unremoved.

"As for me," says Mr. Phelps, "I have always obeyed Lady Macbeth's command to her husband:

" 'Get on your nightgown'."

* * *

Personal

Eddie Nolan: Please come back. All is forgiven.

Exponents of Mass Production—Words and Cars

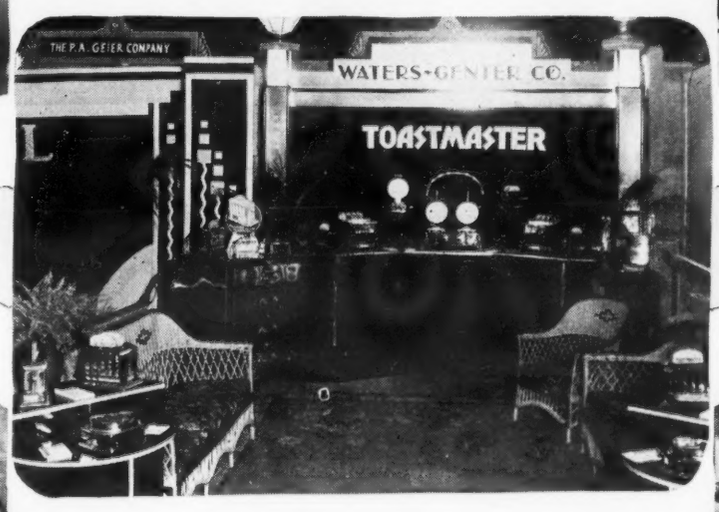
Floyd Gibbons (left), and Henry Ford pose after broadcasting from Ford's engineering laboratories in Dearborn.

ALLIED MERCHANDISE FEATURED AT ATLANTIC CITY

Appliance Group Makes Big Showing at N.E.L.A. Convention

Ranges, Ironers, Cleaners, Washers, Etc., Exhibited

Top—Vacuum cleaners of all sizes, from the midget to the giant, were displayed by the Hoover Co. Bottom—Electric washers made up the exhibit of the Whirldry Corp.



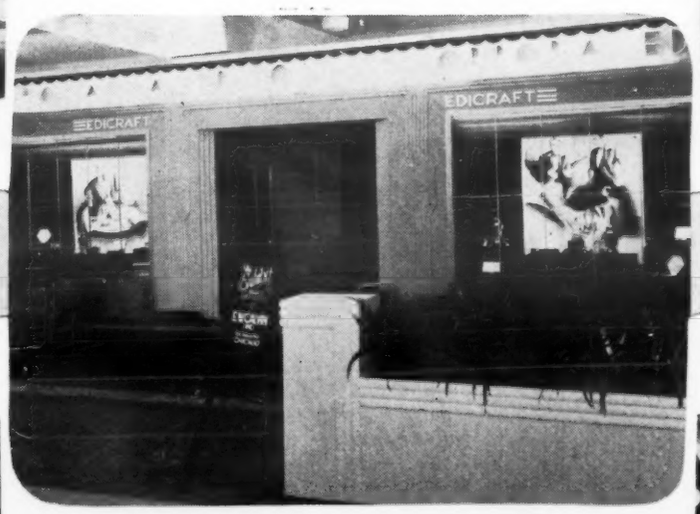
Waters-Genter Co. featured several styles of toasters and waffle irons in its booth at the Atlantic City Auditorium. Special emphasis was placed on the Toastmaster models sold by the company.

Top—A dozen or more washers in the display of the Prima Mfg. Co., Inc. Bottom—The Conlon staff on duty to demonstrate the ironers and washers to visitors.

Portable electric dishwashers were demonstrated by the Conover Co. at the convention. Two special exhibition models with glass fronts were used to show the cleaning action.

The Walker & Pratt Mfg. Co. showed two of its products, electric ranges and electric water heaters. Different styles of ranges were arranged in the exhibition space.

One of the new products at the convention was the A-B-C spinner washer, which was displayed by Altorfer Bros Co. Electric ironers and food mixers were also shown.



Modernistic paintings were used effectively to illustrate the uses of Edicraft table cookery. Flanking the paintings were toasters, percolators and waffle irons contrasted against a black background.

Top—Percolators and toasters in the brilliantly lighted booth, arranged by the Robeson Rochester Corp. Bottom—Cinderella washers were exhibited by the Black & Decker Mfg. Co.

Top—Manning-Bowman showed toasters, waffle irons and percolators. Bottom—A full line of electrical aids for the home was exhibited by the Samson-United Corp.

REQUESTS FOR INFORMATION

Readers who can be of assistance in furnishing correct answers to inquiries, or who can supply additional information, are invited to address Electric Refrigeration News, mentioning query number.

Dry-Ice Corp.

Query No. 434—"Will you please give us the address of the Dry-Ice Corp."

Answer—Dry-Ice Corp., 52 Vanderbilt Ave., New York City.

Service Manuals

Query No. 435—"Please advise where I may obtain service manuals for the Norge, Kelvinator and Copeland refrigerators."

Specifications

Query No. 436—"Do you have a chart showing various makes of electric refrigerators, with storage capacities for the various models, and selling prices."

Answer—In the Buyer's Guide Section of Jan. 14, 1931, issue of the NEWS you will find specifications (machine and cabinet) of electric refrigerators manufactured by a number of companies. This listing was confined to companies advertising in this issue. Selling prices were not given.

King Kold

Query No. 437—"We would like to know the name of the manufacturer of the King Cole or King Cold electric refrigerator."

Answer—The King Kold electric refrigerator is manufactured by the Illinois Moulding Co., 2411 West 23rd St., Chicago, Ill.

Evaporators and Condensers

Query No. 438—"Please send us a list of manufacturers of evaporators, condensers and controls, for use particularly with domestic refrigeration systems."

Answer—See Buyer's Guide Section of Jan. 14, 1931, issue.

Compressors and Evaporators

Query No. 439—"Please send us a list of companies which manufacture compressors and evaporators."

Answer—See Buyer's Guide Section of Jan. 14, 1931, issue.

Quick Freezing Plants

Query No. 440—"I would like to obtain prices on the installation of a plant for the quick freezing of peaches, strawberries, etc. I have a customer who wants to freeze 7,000 bushels of peaches this season.

"Will you also send me all available data on peach freezing."

Answer—Birdseye Packing Co., 3 Commercial St., Boston, Mass.; Peterson Rapid Freezing Systems, 747 McCormick Bldg., Chicago, Ill.; Kolbe Instant Freezing Systems, 53 W. Jackson Blvd., Chicago, Ill., and M. T. Zarotschenzeff, 6100 Kimbark Ave., Chicago, Ill.

Refrigerator Covers

Query No. 441—"We do not find any advertising in a recent issue of the NEWS for trucks and covers for moving refrigerators. Can you furnish us with the name of manufacturers of such equipment."

Answer—Refrigerator covers—Bearse Mfg. Co., 3815 Cortland Ave., Chicago, Ill.; Fulton Bag & Cotton Mills, Atlanta, Ga., and the Union Canvass Goods Co., 1016 Hamilton Ave., Philadelphia, Pa. Trucking equipment — Laramac Co., Dayton, Ohio.

Water Coolers

Query No. 442—"I would like to get a list of manufacturers of electric water coolers. I am especially interested in a cheap bottle water cooler."

Answer—See Buyer's Guide Section of Jan. 14, 1931, issue.

Beverage Dispenser

Query No. 443—"We understand that there is an outdoor, coin operated, bottled drink dispenser, which uses electric refrigeration. Can you give us the name of the manufacturer?"

Answer — Consolidated Engineering, Ltd., 2146 East 25th St., Los Angeles, Calif.

Catalog Data

Query No. 444—"Where can we purchase a reference guide, listing specifications, prices, refrigerants used, type of compressor, etc., on various makes of electric refrigerators.

Answer—See Query No. 436.

Ice Cream Freezers

Query No. 445—"I am seeking information on ice cream manufacturing machinery for a store. What companies are making this type of equipment?"

Answer—Anco Freezer Corp., 5600 Euclid Ave., Cleveland, Ohio; Taylor Freezer Corp., Beloit, Wis., and the Universal Freezer Corp., 1113 Penn Ave., Pittsburgh, Pa.

Cabinet Manufacturers

Query No. 446—"Can you furnish us with a list of various cabinet manufacturers?"

Answer—See Buyer's Guide Section of Jan. 14, 1931, issue of the NEWS.

Methyl Chloride

Query No. 447—"What companies produce methyl chloride used in the refrigeration industry?"

Answer—Roessler & Hasslacher Chemical Co., 10 E. 40th St., New York City.

They Win $1,000 Prizes

The two prize winners, Lucile Harris and Claud E. Miller, pictured in the Frigidaire exhibit at the N. E. L. A. convention.

* * *

Westerners Win Contest

ATLANTIC CITY—Two first prizes of $1,000 each were won by Miss Lucile Harris and Claud E. Miller of Wichita, in the final intersectional employees speaking contest of the National Electric Light Association held recently at the annual convention here.

The winners are employees of the Kansas Gas and Electric Co. Mr. Miller sells commercial Frigidaire equipment and Miss Harris is the organization's home economist.

Subject of the national contest was "What Electricity Has Done for the Home and Its Future Possibilities.

LITERATURE OF MANUFACTURERS

Catalogues, bulletins and other material recently issued.

Manufacturers are requested to send copies of new trade literature to Electric Refrigeration News.

Gibson

"Balanced Simplicity" in Gibson refrigerators is the subject primarily discussed in a new three-color folder issued by the Gibson Electric Refrigerator Corp. of Greenville, Mich.

Double views of three household models, together with a description of their features and specifications, and a heading and discussion of "what balanced simplicity means" occupy all of one side of the folder.

Non-technical information on Gibson cold regulators and units takes an important position on the remaining side of the folder; while small two-tone pictures of Gibson features and inserts of Gibson plants, with a few words upon the company's experience, complete the circular.

Majestic

A new booklet telling the story of Majestic electric refrigerators is now being distributed by the Grigsby-Grunow Co. of Chicago.

The first two of its 15 pages, bound between covers bearing the Arctic-sun-and-polar-bear stamp of the company, carry news of the fact that the Good Housekeeping Institute has given its seal of approval to the Majestic refrigerator, with illustrations of institute investigators applying tests to the product.

Then follows a list of the 30 advertised features of Majestic refrigerators, with 10 blue-bordered inserts portraying the more important ones. Colored photographs and descriptions of three household models occupy the next six pages of the booklet, while a semi-technical discussion of the unit fills the remaining two pages to close the folder.

Sparklets

With "A Soda Fountain on a Tea Tray" as its title, a new booklet has been recently circulated among prospective buyers by Sparklets, Inc., 19 West Forty-fourth St., New York City.

In addition to the usual directions for operation and listing of many possible uses, there appears the endorsement of the product by the Good Housekeeping Institute, an article by Dr. Glazebrook, medical director of the New York Stock Exchange, advocating use of carbonated water as a part of the diet, endorsements by leading refrigeration companies, and a pamphlet of food and drink recipes in which Sparklets may be used.

With the latter, in a pocket at the back of the booklet, is a reprint from ELECTRIC REFRIGERATION NEWS, "Psychological Merchandising," by A. Edwin Fein, president and general manager of Sparklets, Inc.

Westinghouse

Westinghouse distributors are now circularizing a new folder on Westinghouse refrigerators among dealers' prospects.

One side of the publication, which unfolds into a single large sheet, bears pictures of six household models of Westinghouse units with data and specifications concerning them.

The other side carries 24 small orange squares, each of which pictures a particular feature of Westinghouse.

THE CONDENSER

ADVERTISING RATE fifty cents per line (this column only).

SPECIAL RATE if paid in advance — Positions Wanted — fifty words or less, one insertion $2.00, additional words four cents each. Three insertions $5.00, additional words ten cents each. All other classifications—fifty words or less, one insertion $3.00, additional words six cents each. Three insertions $8.00, additional words sixteen cents each.

REPLIES to advertisements with box numbers should be addressed to the box number in care of Electric Refrigeration News, 550 Maccabees Building, Detroit, Mich.

POSITIONS WANTED

REFRIGERATION engineering. Ten years' experience in household, commercial and marine work. Also purchasing and production. Box No. 336.

COMMERCIAL sales manager, with seven years' experience embracing all angles of merchandising electric refrigeration, available July 1. Past experience includes factory contact work on both domestic and commercial and training of salesmen, sales-promotional and educational work in distributor organizations. Box No. 343.

INTERESTED in wholesale connection August 1 with responsible manufacturing or distributing organization. Eight years' experience, age 31, married, familiar with Ohio, Indiana and Illinois territory, references as to ability and character. Box No. 345.

POSITION wanted with manufacturer of frozen foods by man with nine years' experience in selling and engineering refrigeration jobs. Now located on Pacific Coast, but free to go to any section of the country. Replies also solicited from manufacturers of equipment for displaying frozen foods. Box No. 344.

SALES Manager or Representative who for five years has been associated with refrigeration industry in responsible position. Sincere, honest, hard worker and capable. Understands thoroughly all phases of modern merchandising practices, and is competent to direct sales of manufacturer or distributor nationally or locally. Available immediately. Box No. 346.

EQUIPMENT FOR SALE

FORMER Kelvinator distributor has stock commercial compressors, evaporators, fin coils and parts for sale at bargain prices. Will submit stock list and accept offer on all or part of this stock. Westinghouse Electric Supply Co., Oklahoma City.

FOR SALE Holmes refrigerator units. We have several for which no reasonable offer will be refused. Marvel Bros., 72 Prince St., Elizabeth, N. J.

USED EQUIPMENT for sale may be advertised in The Condenser column. This column provides an economical medium for the advertiser who does not wish to use display space. Fifty words may be inserted at a cost of only $3.00 (paid-in-advance rate.) Three insertions—$8.00.

EQUIPMENT WANTED

WANTED Frigidaire equipment, any size, any condition, also parts. Will consider other makes. Write at once. B. L. Williams, 1004 Pa. Ave., N. W., Washington, D. C.

FRANCHISE OPEN

MANUFACTURERS may avail themselves of the special rates applicable to The Condenser column to advertise franchise opportunities in specific territories. Advertisements will be inserted under the above heading "Franchise Open." Fifty words or less—only $3.00 for a single insertion. Three insertions—$8.00.

FRANCHISE WANTED

DISTRIBUTOR AND DEALER ORGANIZATIONS seeking franchise opportunities may use The Condenser column to inform manufacturers of their interest. Advertisements will be inserted under the above heading "Franchise Wanted." The paid-in-advance rate is $3.00 per single insertion of fifty words or less—three insertions $8.00.

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Electric Refrigeration News
550 Maccabees Building
Detroit, Michigan 1931

Gentlemen: Please enter my subscription to ELECTRIC REFRIGERATION NEWS.

United States and Possessions: ☐ $2.00 per year ☐ Three years for $5.00
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Refrigerated Food Section only $1.00 per year.

I am enclosing payment in the form of ☐ Check ☐ P. O. Order ☐ Cash

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Special Rates for Group Subscription Orders

For paid-in-advance subscriptions in United States only. Send check with order. Papers will be mailed to individual addresses.

5 or more subscriptions entered at one time, $1.75 per year each.

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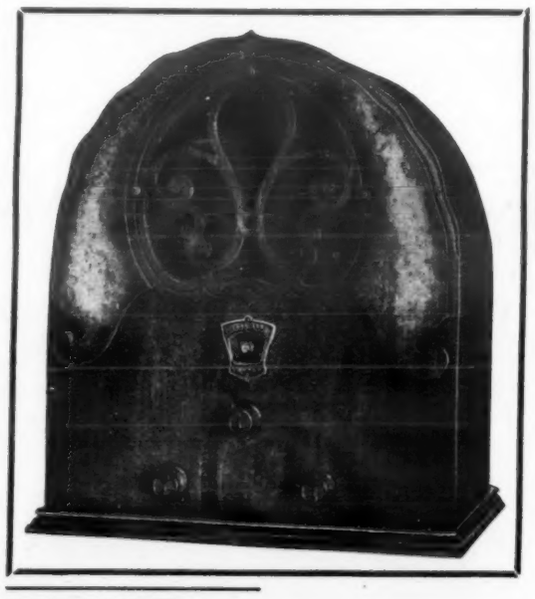


Model "K"
with PENTODE

The greatest little package of concentrated power and pep ever produced. A great distance-getter with tone as true and mellow as an old violin. Has every new radio feature, including THREE SCREEN-GRIDS—PENTODE—VERNIER DIAL, KILO-CYCLE MARKED AND ILLUMINATED—FULL DYNAMIC SPEAKER—SAFETY FUSE—SELF-HEALING CONDENSERS—EXQUISITE WALNUT AND MAPLE CABINET and FULLY SHIELDED CHASSIS.

RETAIL LIST PRICE COMPLETE WITH TUBES $49.95

TRAV-LER

THE PIONEER, SCORES AGAIN WITH THE FIRST COMPLETE LINE OF SMALL TYPE RADIO FEATURING RADIO ENGINEERING'S MOST AMAZING NEW DEVELOPMENT . . .

THE PENTODE TUBE

And this marvelous new feature is not confined to just one model, the complete line features it throughout. Even the lowest-priced TRAV-LER, at $29.95 retail complete, has it—unheard-of at such a price—and placing TRAV-LER DEALERS miles ahead of the crowd.

The small-type radio, low in price and wonderfully efficient, has literally "taken the day." It has lifted the radio entirely from a highly specialized field to "package business"—where you can sell it satisfactorily and PROFITABLY. *Is there any earthly reason why you should not share in these profits, lying almost on your doorstep?*

There are NO QUOTAS—OR OTHER BURDENING RESTRICTIONS in the TRAV-LER proposition—just a clean-cut, sensible policy—and a money-maker. There is everything to gain and nothing to lose. Write for it AT ONCE—NOW—TODAY!

TRAV-LER MFG. CORP., ST. LOUIS

In Three Parts

Refrigerated Food Section

Part Two

ELECTRIC REFRIGERATION NEWS

Registered U. S. Patent Office.

The business newspaper of the refrigeration industry

ISSUED EVERY TWO WEEKS
VOL. 5, No. 22, SERIAL No. 124

Copyright, 1931, by Business News Pub. Co.

DETROIT, MICHIGAN, JULY 1, 1931

Entered as second class matter Aug 1, 1927, at Detroit, Mich.

FIFTEEN CENTS PER COPY
TWO DOLLARS PER YEAR

BIRDSEYE FOODS MARKETED IN 65 EASTERN TOWNS

Quick-Frozen Products May Be Introduced In South

BOSTON—Birdseye Frosted Foods are now being sold in 65 Eastern cities and towns, according to officials of the Birdseye Packing Co. All of the retail outlets for these quick-frozen meats and vegetables are in New England, except for one store in New Jersey, and an employe store in New York City.

Although immediate distribution of these packaged foods will be confined to the East, the establishment of retail outlets in New York City and in the South is being considered.

Low temperature display cases to handle these quick-frozen foods are being sold to dealers on the installment plan. The purchase of the cases is being financed by the Commercial Credit Co. In most cases, a down payment of 25 per cent is required, followed by monthly payments based on individual situations.

Four types of cases are being used by retail dealers for the display of quick-frozen foods. The low temperature cases are: "Hill Dry-Cold," made by C. V. Hill & Co., Trenton, N. J.; "Oreole," made by Ottenheimer Brothers, Inc., Baltimore, Md.; "ZerOviz," made by Grand Rapids Cabinet Co., Grand Rapids, Mich.; and "Hussman," made by Allied Stores Utilities Co., St. Louis, Mo.

The extension of retail distribution has been undertaken after a year's survey in Springfield, Mass., and a careful testing of display cases to determine their possibilities.

The list of retail dealers includes:

Massachusetts — Manhattan Food Stores, Inc., Allston; Fred Wrigley, Ballardvale; H. P. Woodbury and Sons, Beverly; Federal Coffee Co. and Blue Bird Food Shop, Boston; Kennedy & Co., Inc., Brockton; Francis K. Itwin, Cataumet; L. Anderson & Son Co., Concord; W. E. Smart Co. Danvers; A. W. Lagerquist, Dorchester; Ten Acres, Inc., Falmouth; D. A. Boyle & Co., Fitchburg; S. K. Ames, Inc., Gloucester; The Koch Grocery, Greenfield; Hyannis Market, Hyannis; Ritternman's, Holyoke; Ken-

(*Concluded on Page 6, Column 4*)

CLEVELAND DISTRIBUTORS COOPERATE WITH DAIRY

CLEVELAND—Ten Cleveland electrical refrigerator dealers and distributors are cooperating with the S. M. A. Corp. of this city by displaying dummy cans of Pantry Table Cream and Pantry Whipping Cream in each refrigerator in their showrooms.

The sales outlets which are displaying the dummy cans, according to Paul R. Frohring, general sales manager of the S. M. A. Corp., are as follows: Kelvinator Sales Corp.; Frigidaire Sales Corp.; Cushman Refrigerator Co.; Electrolux, Inc.; Danforth Refrigeration Co.; The May Co. Refrigeration Department; Copeland Electric Refrigerator Co.; Smith Oby Co.; Universal Cooler Co.; and the Starr Piano Co. The dummy cans are also used at headquarters of the General Electric Refrigeration Department.

"All advertising and literature, as well as instructions printed on each can of whipping cream," Frohring stated, "call the purchaser's attention to the fact, that better results can be obtained by chilling the cream before whipping by placing it in the coldest part of the electric refrigerator.

"The Cleveland company," Mr. Frohring added, "is extending this offer of dummy cans to electric refrigerator dealers and distributors in other sections of the country.

WATER COOLER DUPLEXED TO ICE CREAM CABINET

AKRON, Ohio—The Central Hardware and Factory Supply Co., Temprite-Kelvinator distributor, has recently installed a Temprite water cooler in the Akron Garden Restaurant.

The water cooler is duplexed with an ice cream cabinet operating at zero temperatures.

Connecticut Code Tightened on Foodstuffs

HARTFORD, Conn.—Food to be eaten without cooking shall not be stored in direct contact with ice, new regulations contained in the Connecticut sanitary code provide.

The amended code provides for stricter supervision of all places of business where foodstuffs are sold. Formal notice of the new provisions are being sent to all food merchants.

All ice boxes and refrigerators must be kept in a clean and sanitary condition, and are subject to constant inspection. It is also required that drinking beverages not bottled shall be kept in fly-tight containers, from which the liquid may be removed only by faucets.

One section of the code provides that "all foodstuffs stored or exposed for sale must be protected from flies and dust and foodstuffs exposed for sale must be stored at least 18 inches above the floor.

The term "foodstuffs" includes both raw and cooked foods, candy, and any other food intended for human consumption not sold in single-service fly-tight containers—except vegetables which are customarily cooked before eating, and fruits with protective coverings, which are customarily removed before consumption of the fruit.

Other sections require absolute cleanliness in trucks, counters and other equipment used in the handling of food.

NEW HAVEN CO. SELLS FROZEN ORANGE JUICE

NEW HAVEN, Conn.—Consumers of dairy products in this city and environs are taking very readily to the innovation of frozen orange juice, according to A. W. Holzheimer, sales manager for the New Haven Dairy Co., a subsidiary of National Dairy Products Corp., which is distributing "frozen sunshine," as the new product is called.

"We have found New Haven to be a pretty good city for this product," Mr. Holzheimer said. "Sales have lived up to our expectations, and the volume is showing a steady increase.

"Thus far," Mr. Holzheimer states, "few customers have placed daily orders for the frozen juice. The juice is delivered with milk and other dairy products handled by the concern. It is packed in paraffined containers, and is being sold chiefly in pint and half-pint quantities."

Pints now sell for 20 cents, and half-pints for 11 cents. Consumers are instructed to thaw the juice slowly in their own refrigerators.

RETAIL GROCERS START NATIONAL MEETING JULY 6

"Public Be Served," Is Theme For Convention At Milwaukee

MILWAUKEE—"The public be served" is the announced theme for the thirty-fourth annual convention of the National Association of Retail Grocers, which will be held here July 6 to 9.

Those who attend the conclave will make their headquarters at the Schroeder hotel, although the Milwaukee Auditorium will be the scene of most of the sessions and will house the model store. The latter, together with the Grocery Trade Exposition, will be dedicated at noon of the first day.

Listed among prominent persons scheduled to address the convention are Katherine A. Fisher, director of the Good Housekeeping Institute; Philip F. LaFollette, governor of Wisconsin; Gerald P. Nye, U. S. senator from North Dakota; and Clyde Kelly, Pennsylvania congressman.

Officials report that a party of grocers from Europe has made plans to be in Milwaukee for the meetings. Because of Milwaukee's central location, a large attendance is expected.

Following is the official convention program:

Monday, July 6

10 a. m. Convention called to order in Plankinton hall, Milwaukee Auditorium, by Henry Schultz, president of the Milwaukee Retail Grocers' Association. Singing of the *Star Spangled Banner* an *On, Wisconsin;* invocation; introduction of national officers and distinguished guests; announcement of convention committees; reports of the rules and order and credentials committees; annual reports of President E. S. Berthiaume, Secretary-Manager C. H. Janssen, and Treasurer George G. Croner.

12 noon. Formal opening and dedi-

(*Concluded on Page 8, Column 1*)

CONNECTICUT FARM TO USE COLD STORAGE PLANT

SOUTHINGTON, Conn.—Plans are being drawn for a cold storage plant to be erected at Lakeview Farm, of which Harold Rogers is manager.

Cost of the plant will probably be in the neighborhood of $35,000. Architect Loomis J. Thompson of New Britain is preparing the plans.

Coast Merchants Score Victory Over Chains

SACRAMENTO, Calif.—(UTPS)—Independent retail merchants of California scored a victory in their legislative fight against chain stores when the new Anti-Discrimination Act, was passed by the last state legislature and recently signed by Governor James Rolph, Jr. The new law goes into effect in August.

The act, listed as Assembly Bill 1,662, prohibits any chain store system from establishing a unit beside or in the immediate vicinity of a local independent retailer for the purpose of driving him out of business by quoting prices which fall below the legitimate price level. It provides that competition may be met in good faith, but "not with the intent to destroy."

In both Nevada and North Carolina, the Supreme Courts have established the constitutionality of similar laws. Judicial bodies determine whether chain store systems are violating the act by comparing prices quoted by its various units in different sections of a given city or community, after making due allowances for any possible variations necessitated by grade, quality, or quantity of a product and costs of its transportation.

GROCERS IN FLORIDA MODERNIZE STORES

WASHINGTON, D. C. — Some 200 Florida grocery stores have remodelled their business places, officials of the Jacksonville district office of the Bureau and Domestic Commerce state, as the result of the model store exhibits erected in Jacksonville and Orlando during the last year through the cooperation of trade groups in these cities with the Department of Commerce.

In the Jacksonville area 123 grocery stores have been modernized, while in the Orlando territory some 37 stores have been remodelled. Throughout the state, the Florida Retail Grocer's Association reports that about 50 small town stores have followed the movement.

Increase of business reported by the remodelled stores, according to officials of the Jacksonville Bureau, range as high as 50 per cent of their previous volume of trade.

It is estimated that about $32,000 were spent by the stores with other lines of business in the remodelling activity. The average amount for this purpose was placed at $160 per store.

Model grocery exhibits are now open at Louisville, Ky., and Norfolk, Va., and one is to be opened at Charleston, S. C., in a short time.

HOME ECONOMICS CONCLAVE DRAWS RECORD NUMBER

1,600 Attend Six-Day Convention; Discuss Many Topics

By Elston D. Herron

DETROIT — Home economists, 1,600 strong, gathered in Detroit from June 22 to 27 for the twenty-fourth annual convention of the American Home Economics Association, one of the largest conclaves in the history of the organization, according to registration officials. Delegates were present from every state in the Union.

Lectures, round table discussions, and business meetings were supplemented by tours of the city, teas, banquets, and entertainments, and officials of the association reported that attendance at the several lecture and discussion meetings reached new records on several occasions.

With registration over, the convention's department of workers in child development and parental education met for its first meeting Monday night in the Italian garden of the Hotel Book Cadillac, headquarters of the home economists during the series of meetings.

Family economics was the subject of a discussion on the second day of the convention, with addresses being made by Dr. John Sundwall of the University of Michigan, and John Kay of the Metropolitan Life Insurance Co.

Family relationships was the subject of another group of addresses given by Miss Frances C. Davis and Miss Ellen Miller, both of the Merill-Palmer school, and Mrs. Edith Hale Swift of the American Social Hygiene Association.

Two addresses were made on the same day by I. G. Macy of the Merill-Palmer school, and Wells A. Sherman of the United States Bureau of Agricultural Economics upon subjects relative to food and nutrition. Modern homes and textile products were discussed by three women—Mrs. Katherine Hess, Kansas State Agricultural College; Miss Florence Davies of the *Detroit News;*

(*Concluded on Page 5, Column 2*)

DISTRIBUTOR AVERAGES COMMERCIAL SALE A DAY

KANSAS CITY—A commercial installation a day for April, May and June is the record attained by the Copeland Refrigeration Co., here.

Nor have homes and apartments been neglected to do this, for the company has just completed installations in four apartment buildings, and has set up many machines in homes.

Recent apartment house installations include a 24-apartment building, located at 3717 the Paseo. The equipment consists of one model X compressor with 24 Alaska M-411 refrigerators and 24 7-A Copeland tanks.

The Linrose Apartment building has the same model compressors with a 521 Crystal box and a tank for each of the 18 apartments. The Wilcoxen Apartments and the Valentine Apartments, both 12-apartment buildings, have similar equipment for their tenants.

The Kresge store recently had installed a model AM compressor to cool the orange juice sold in the store.

Three compressors of the 3-XA type were installed in Jim Lee's restaurant in the new Professional Building. This restaurant feeds an average of 1,500 people daily.

The Valentine Hotel restaurant, with seating for 220, has a model XA to cool its food and drinks.

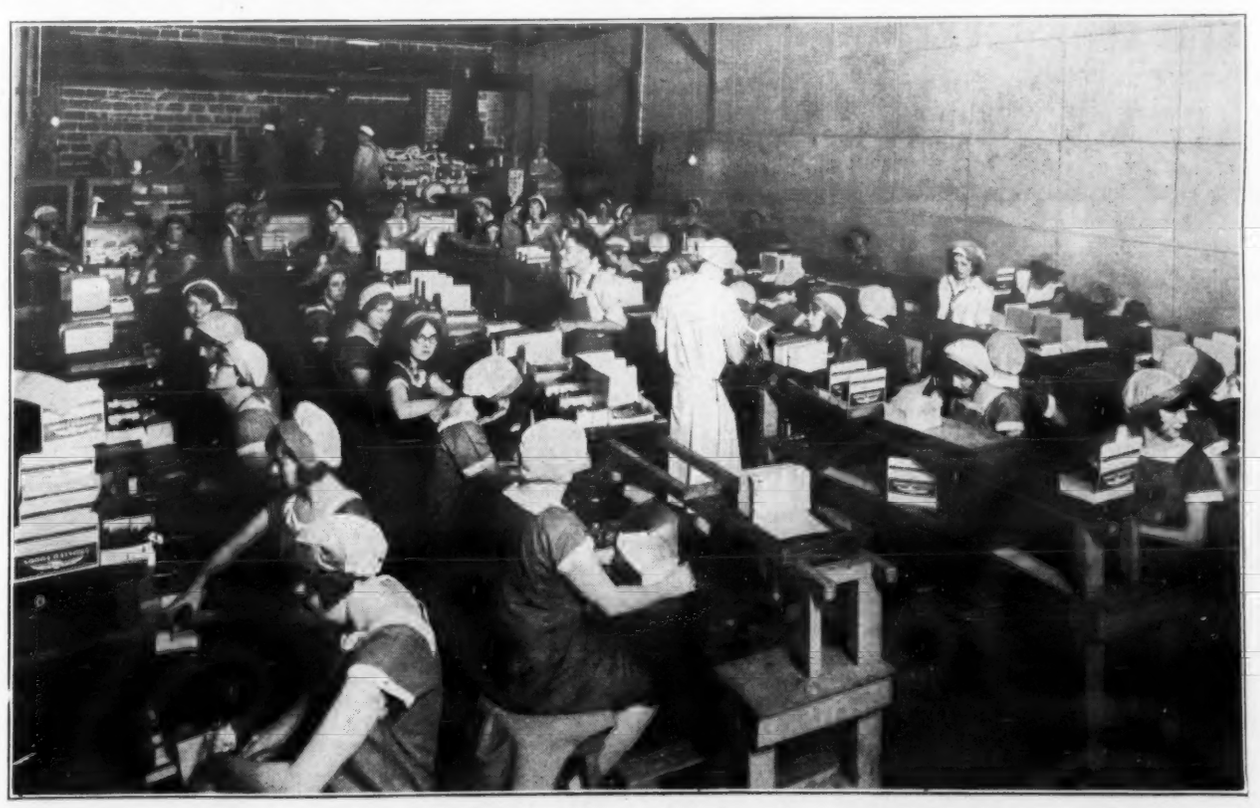
The restaurant for the Colored Detachment at Leavenworth, Kan., has installed another Copeland to preserve the soldiers' food.

DENVER DEPARTMENT STORE HAS SODA FOUNTAIN

DENVER, Colo. — The Denver Dry Goods Co. has recently installed a soda fountain and luncheonette which is Frigidaire equipped.

The soda fountain equipment was designed and built by the L. Grauman Co. of Denver. Some 1,600 persons were served on the opening day.

Preparing Birdseye Products For Eastern Shipment



Workers in the Ray-Maling Co. plant at Hillsboro, Ore., packing asparagus and spinach in Birdseye Foods boxes preparatory to the quick-freezing process. The cartons, in which the products are sold, are packed entirely by hand and the packed containers are subjected to low temperatures to freeze the vegetables quickly. Complete description of the freezing process used in this plant is printed on page two of this section.

RAY-MALING PLANT HAS NEW FREEZER

By Donald M. Taylor

PORTLAND, Ore.—Snails have not yet been experimented upon with the Birdseye quick-freezing process, but a good lively snail might well consider the journey through the 60-foot Birdseye quick freezing machine at the Ray-Maling Co. plant at Hillsboro, Oregon, a slow trip as well as a very cold one. One has to look quite close at the big nickel-chrome-steel belts to see any sign of movement.

The time fruits and vegetables being processed at the Oregon plant for the Birdseye Packing company take to make the journey through the machine depends on the individual product and the temperature, but roughly the freezing time is about 25 times as fast as the cold storage room method of freezing, so the description of "quick freezing" is not after all a misnomer, though for some foods the trip takes more than an hour and a half.

Still, this machine is slow in comparison to a more recent Birdseye development—a 4x6 ft. self-contained, direct-expansion machine, two of which, occupying about one-tenth the space of the big machine, equal its capacity. And the new machine operates with the temperature of the refrigerant about 20° higher than the old machine.

The first one of these new direct expansion machines has been sent out from Massachusetts to the Ray-Maling plant to supplement the big machine.

While the big machine requires several hours to cool down to the 45° F. at which it operates, the compact new machine is ready for operation within a half hour after the switch is turned on. It is, therfore, more adaptable to varying conditions of supply of the raw product.

For economy, the big machine should be kept running continuously, while the small machine can be more readily shut down and started up as the supply of raw product comes and goes.

A small York compressor is hooked up to the direct expansion machine, which is equipped with a series of horizontal hollow plates in which the expansion coils are cast. These plates lie several inches apart.

The cartons of fruit and vegetables to be processed are five inches long, by three wide by two deep. They are slid onto the plates, and when the machine is fully loaded a hydraulic ram lifts the lower plates, telescoping them to within two inches of each other so that every package is contacted top and bottom by a plate.

In the big machine, brine run over refrigerant is pumped to the machine and enters it at five points along the 47 feet of freezing length.

This machine is a double-unit affair, one set above the other, and each unit has an upper and lower belt. York compressors are used.

The cartons are loaded onto the lower belt and travel along with it. Soon the upper belt comes down to contact their top, and against the top side of the upper belt and the bottom side of the lower belt the brine is sprayed. When the cartons emerge at the other end, their contents are frozen solid.

They are packed into corrugated fibre-board shipping cases, 18 to a case, and carried into an adjoining storage room where the temperature is about 20° F., where they spend three or four days.

They are then ready for the journey of about 20 miles by rail or truck to the Terminal Ice & Cold Storage Co. plant at Portland, where a zero room is waiting to receive them.

Here they are held at about zero until ready for shipment to eastern or western distributing points, when they are loaded into refrigerator cars.

It is essential, for the purpose of putting the product into the consumer's hands in the same condition at which it emerges from the quick-freezing process, that it be maintained at a sufficiently low temperature all along the line.

Through the Birdseye Packing Co., in the east, and the Pacific Frosted Foods Corp. in the west, these foods are distributed through retail outlets that are equipped with refrigerated display and storage facilities approved by the Birdseye Packing Company.

Bertrand E. Maling, general manager of the Ray-Maling Company, visiting in Gloucester, Mass., in February, 1929, saw some of the Birdseye processed haddock fillets, and discussed with General Foods Corp. executives the possibilities of quick-freezing strawberries, which have been cold-packed by the Ray-Maling and other Oregon and Washington plants for years.

First Machine Installed in 1929

John G. Souther, a production engineer of the corporation, tried the process on some out-of-season strawberries, and as a result the big machine was shipped to Oregon and set up that year at the Ray-Maling plant. In 1929 and 1930 various Oregon fruits and vegetables were quick-frozen. Souther came to the Oregon plant to supervise the 1930 and 1931 production.

For 1931 the Birdseye Packing Co. outlined a packing program for the Oregon plant that totaled about 1,500 tons of fruits and vegetables. This included 600 tons of peas, 300 tons of whole-kernel yellow bantam corn, 200 tons of spinach, 91 tons of Marshall strawberries, 150 tons of Cuthbert raspberries, 91 tons of Montmorency cherries and 25 tons of Bing cherries.

Because of crop failures it has been necessary to curtail this program somewhat, as a sufficient quantity of high quality raw products has not been available.

Red Cuthbert raspberries have been particularly adaptable to the Birdseye process, and the resulting product is one that can be compared only to berries fresh from the field.

The cellular walls in vegetable matter have been found generally to be more or less rigid, and because of this they burst instead of expanding to accommodate the volume increase of their contents when frozen. The juices, therefore, leak out.

The cells of Cuthbert raspberries, however, have been found more elastic such as the cellular walls in flesh foods, and they, therefore, expand to hold the increase in volume when frozen.

Packers Examine Frozen Products Shipped from England

Australian packers inspecting initial shipment of products frozen by the "Z" process.

FIRST "Z" SHIPMENT REACHES AUSTRALIA

SYDNEY, Australia—Meats frozen by the "Z" process at the plant of the Liverpool Refrigeration Works in England some months ago, were exhibited recently in this city for the first time.

Prior to the long journey to Australia, the steaks, pork chops, sheep kidneys, mutton, fillets of fish, and calves liver were stored at the Cambridge Low Temperature Station for special observation.

Dr. R. P. Allen, chief veterinary officer, London, shipped the samples aboard the R. M. S. "Maloja," where they were stored in the vessel's cold rooms at a temperature between 4° and 6° F.

J. M. Davidson, veterinary officer of the Department of Markers, invited prominent meat exporters, packers and wholesale butchers to inspect the display of the frozen products on view at the Waterside Cold Stores, Sydney.

First wrapped in cellophane the meats were then boxed in neat waxed cartons. The meats arrived in good shape and without any trace of odor. They retained all natural colors, and this was particularly so in the case of sheep brains.

Sheep kidneys were sliced for the benefit of the visitors, revealing wholesome condition throughout.

Some varities of strawberries can not be quick-frozen successfully because their cell walls break and they lose their juice, but others leak only about two per cent. The same thing applies to other fruits.

While this cell rupture is ruinous in fruits, it is highly advantageous in vegetables because it makes them more tender and thereby reduces their required cooking time.

The less cooking, broadly speaking, the less loss of flavor, and quick-freezing cuts the time a third to a half.

Spinach is one vegetable for which proponents of the Birdseye process claim a vast improvement under quick-freezing. They say that people who found spinach unpalatable after it was cooked the 15 or more minutes required for the unfrozen product discover the frozen product, when cooked about 7 minutes, to be highly edible, improved in flavor, appearance and texture.

Peas are another great success. Before they are packed for the quick-freezing they are blanched for about half a minute in a hot bath, from which they emerge with the same sweet taste peculiar to the uncooked pea and deep sea green in color, much more attractive in appearance than the whitish green of the unblanched pea.

Cooked by the housewife in boiling, salted water about 7 minutes, they still retain that sweet taste which is lost in peas cooked for a longer time.

Cranberries, Rhubarb Frozen

Cranberries and rhubarb have been frozen with success. Souther is continually experimenting with other fruits, vegetables and flesh foods at the Oregon plant.

Proper handling by the consumer of these frozen fruits and vegetables is considered essential to the successful upbuilding of their market and to insure this each carton carries on two sides directions for cooking, serving and keeping.

On the peas package, for example, the directions read:

"Keep this carton unopened in as cold a place as possible until ready to cook. It is not necessary to thaw the peas before cooking. Do not keep long after they have completely thawed. These peas are clean and do not have to be washed.

"Cook peas, uncovered, in small amount of boiling, salted water, 7 minutes, or until tender. Season to taste. Begin to count cooking time when water is briskly boiling again after putting in peas. Frozen peas cook in less than the usual time. Avoid overcooking."

On the strawberry carton the directions read:

"Keep the carton unopened in as cold a place as possible until the fruit is to be used. After the fruit is thawed, it should be used immediately. In a refrigerator, the berries will thaw in six to eight hours; at room temperature, in about two hours.

"Serve as chilled fruit with sugar and cream. Crush sugared fruit slightly and use as sauce for shortcakes, puddings, and sundaes. Or, use as fillings for delicious tarts and deep-dish pies. Also good for making ices, sherbets, and gelatin desserts."

SYPHERS WITH AMESBURY CO.

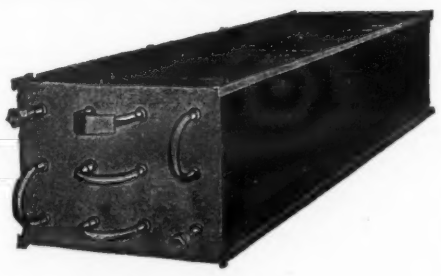
AMESBURY, Mass.—C. C. Syphers, formerly a branch manager for Kelvinator, has been appointed general sales manager of the Amesbury Brass and Foundry Co., manufacturers of refrigerator display cases and other equipment for delicatessens, meat markets, grocery stores, and pastry shops. Previous to this appointment, Mr. Syphers was traveling sales manager for the Mills Novelty Co. of Chicago, and the Hoke Manufacturing Co. of Indianapolis, respectively, and belonged to the Kelvinator organization.

100% VERTICAL SURFACE

U.S. PATENT No. 1,776,235.

LARKIN COILS

FOR ELECTRICAL REFRIGERATION



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Manufacturers, Distributors and Consumers

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Leading manufacturers, some of whom are shown here, have adopted Larkin 100% Vertical Surface Aluminum Plate Coils as *Standard Factory Equipment*. Distributors and dealers pronounce them real sales and service assets. Users find them best because Larkin Coils eliminate dehydration and defrosting problems and greatly reduce servicing. Larkin Coils are made in 93 standard sizes—the largest line on the market. Write us or the manufacturers listed here for detailed information.

Complete Data Sent on Request!

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Originators and Manufacturers

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TRUPAR DAYTON.—OHIO

UNIVERSAL DETROIT, MICH.

WILLIAMS ICE-O-MATIC REFRIGERATION BLOOMINGTON, ILLINOIS

B-K, Junior New Brunswick, N.J.

Zerozone Lifetime Refrigeration

Absopure DETROIT, MICH.

M&E Electric-Automatic REFRIGERATOR PHILADELPHIA

KULAIR PHILADELPHIA, PA.

JACK FROST REFRIGERATION, ltd. TORONTO-CANADA

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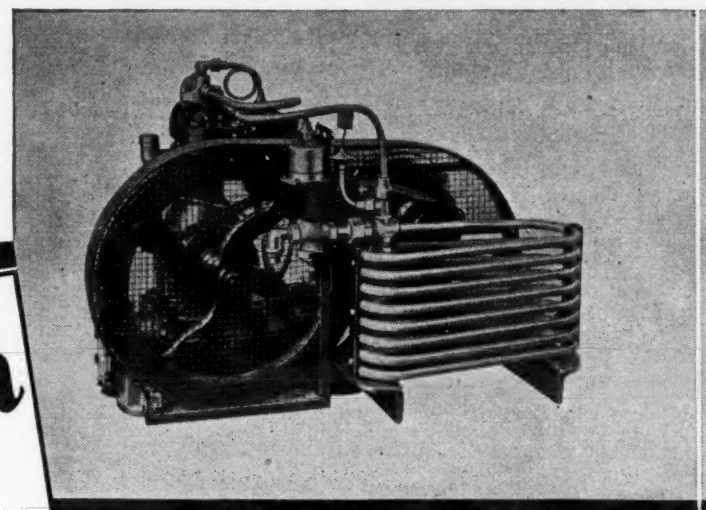
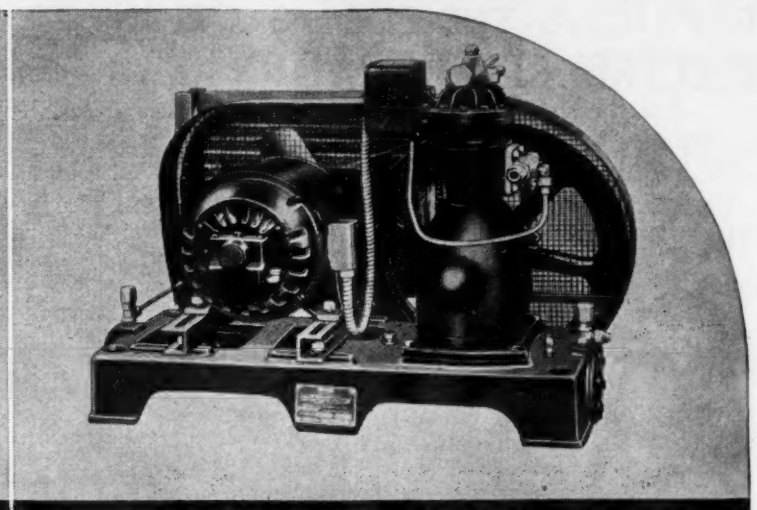
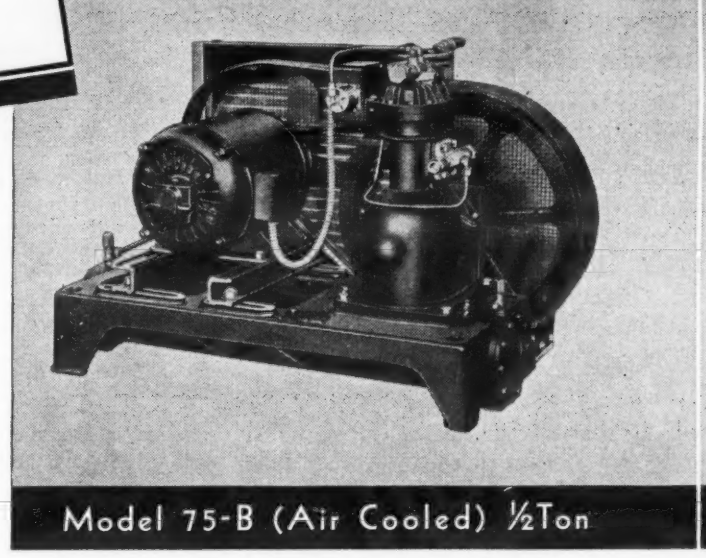
Refrigeration PLUS!



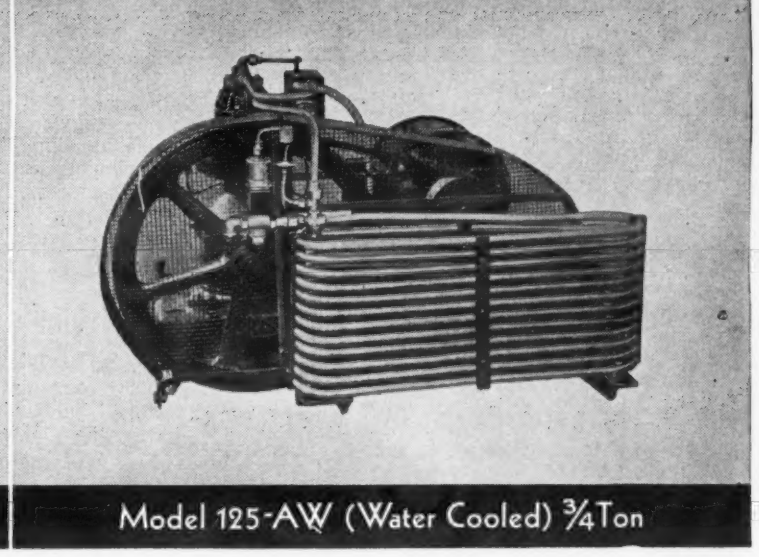
Model 20-AW (Water Cooled) ⅛ Ton



Model 50-C (Air Cooled) ¼Ton



Model 75-B (Air Cooled) ½Ton



Model 125-AW (Water Cooled) ¾Ton

SWING INTO LINE WITH SERVEL'S BIG PARADE OF COMMERCIAL PROFITS . . .

IF YOU want to build a solid increase in your sales and profits — if you want to sell the world's most advanced electric refrigerating machines—

If you want to reinforce your prestige as a merchant with a famous old line that is making new commercial refrigeration history in all parts of the country—

Find out about Servel!

Here's a completely redesigned line of 16 improved machine units that fill every requirement for fractional-ton refrigeration.

They retain the rugged construction and precision workmanship that have established Servel leadership for more than a decade. And they embody changes in design that make them easier to sell—simpler to install—more economical to operate.

In hundreds of cities, alert Servel Commercial Dealers are enjoying the dual advantage of selling a *good* line—and a *complete* one! For, in addition to their exclusive mechanical advancements, these improved Servel models offer a wider range of capacities, meeting every requirement from 130 to 1510 lbs. of ice equivalent per day.

Now—you can sell modernized electric refrigeration for every commercial installation—groceries, meat markets, delicatessens—restaurants, hotels, cafeterias—water-cooling systems—dairies—florist shops. No matter what your customers' requirements might be, there is an improved Servel electric refrigerating machine that will exactly meet their needs. No overloading! No waste capacity! Instead, the right unit for every job!

Dealer franchises are still available for a few territories. Ask for full details of Servel's attractive proposition. Take advantage of the tremendous opportunity for profitable sales in July! Write for information today.

QUICK FACTS

■ NEW-STYLE CONDENSERS: *interchangeable; highly efficient.* . . . MULTIPLE VEE-BELT DRIVES: *insuring uninterrupted service and quiet operation.* . . . SIMPLIFIED CONTROLS: *positive action; fully automatic.* . . . ECONOMICAL OPERATION: *low-speed compressors; greater refrigeration for current used.* . . . RUGGED PRECISION CONSTRUCTION: *built for long use; compact and accurate.* . . . WIDE RANGE OF 16 MODELS: *capacities of 130 to 1,510 lbs. ice equivalent per day.*

SERVEL SALES, Inc., Evansville, Ind.
Makers of a complete line of electric household and commercial refrigeration

SERVEL
COMMERCIAL
REFRIGERATION

REFRIGERATED FOOD SECTION ELECTRIC REFRIGERATION NEWS

The Business Newspaper of the Refrigeration Industry

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Food Equipment Retailing

ONE of the most significant statements heard at the convention of the American Home Economics Association, to attend which 1,600 women flocked to Detroit last week, was made by P. G. Agnew, secretary of the American Standards Association. Mr. Agnew urged that the association wield its influence to turn the attention of scientists toward the improvement of such lowly kitchen implements as the paring knife, the can opener, and the frying pan.

He advised the association to "prepare a five-year plan for research and standardization aimed to bring to the ultimate consumer improvements and economies in hundreds of common commodities in which development has lagged behind other technological advances because of the lack of organized consumer effort."

One reason for the "lack of organized consumer effort" which Mr. Agnew deplores is probably that the housewife hasn't known just what she wanted until some good salesman brought it in and showed it to her. She acquired a vacuum cleaner and a washing machine that way, and now she is being sold an electric refrigerator in the same fashion.

An Eye-Opener

Undoubtedly the electric refrigerator, its convenience and economy, has opened the eyes of many a housewife to the possibilities of modern kitchen equipment. She has learned new tricks in the preparation of food with this machine and she is becoming interested in other food handling devices because of her experience with it.

Power company salesmen have found that women to whom they have sold electric refrigerators are good prospects for electric ranges, and reports have it that the range industry is enjoying a larger and larger demand for its products. Men who are promoting the sale of ranges declare that all the electric range needs is the same sort of specialty salesmanship which has been applied to the electric refrigerator.

Refrigeration sales organizations which are casting about for lines of companion merchandise may find that other devices for handling food may be the appliances they are seeking.

Stimulated Desires

It is becoming the fashion for radio dealers to speak of themselves as "home entertainment merchandisers," and toward that end they are again pushing phonographs and records, adding home movie outfits, and awaiting eagerly the arrival of full-grown television. Perhaps electric refrigeration dealers may become "food equipment merchandisers," and make a specialty of helping the housewife put better meals on the table with less effort and at smaller cost.

Furniture stores have found that sometimes it pays to hold special sales of single high quality pieces, such as chairs, lamps, or tables, at no-profit prices. Snatching at a bargain, a family will proudly bring home a very handsome new chair. Once the chair is ensconced in the living room, however, the remainder of the furniture begins to look shabby by comparison. In due time a whole new outfit of good quality is purchased to make the rest of the room, or even the entire home, meet the standard set by the new chair.

The appearance of a good-looking and efficient new electric refrigerator in a kitchen may have the same effect. The fuss and bother of an old coal stove may prompt the "lady of the house" to seek a new stove which is as trouble-and-worry-free as her new refrigerator. She may decide to look into the merits of electric dishwashers. And should a salesman bring around one of the new food mixers and preparers, he may find her in a receptive mood.

Likewise, the acquisition of a new display case may cause a food merchant to eye with dissatisfaction some of the other equipment of his store. Consequently, the salesman who showed him how electric refrigeration could save him money should find this food merchant a willing listener when he comes with more items of modern equipment to sell.

Genuine Service

It remains to be seen just what improvements will be made on the paring knife, the can opener, and the frying pan. But when new inventions for the kitchen make their bow, nobody is better equipped to introduce them to housewives than the electric refrigeration dealer. And nobody will get a better reception.

In the meantime, while we are awaiting the arrival of the electric frying machine and the automatic pie-maker, such appliances as electric ranges, dishwashers, and food preparers offer electric refrigeration organizations an opportunity to take other kitchen appliances to their customers and prospects.

Few sales organizations will have such a valid claim to the giving of genuine service to the public as will the merchandisers of equipment for the handling of food.

GLEANINGS
FROM RECENT PERIODICALS

"This week the Food Institute offices have been swamped with inquiries from Wall Street about what was wrong with the big dairy companies. The drive of bear rumors said that price cutting was becoming rampant, the chain grocers were going to take over the ice cream business and that the Federal Trade Commission was about to proceed against the dairy combinations.

"These rumors are just another evidence of the present tendency of intelligent men to become panicky. There is some price cutting in fresh milk; the canned milk market is seriously down; but in the aggregate the consumption of milk is off only a small percentage and the numerous groupings of dairy companies have been a stabilizing influence against price cutting. The Federal Trade Commission is checking all their activities, as it is with most lines of American business, but Washington reports are to the effect that no thunderbolts are now due to be launched at business.

"The limited volume of ice cream sales through the winter months has been running about 12 per cent below a year ago but the aggregate volume depends upon the summer season, with little prospects that the chain grocers can immediately transfer this from the soda fountains which handle about 75 per cent of the consumption."—*The Food Institute.*

"The most important service a refrigerator can render is to give dependable refrigeration temperatures. Rolls and cooky doughs can be made when there is plenty of time, stored in the refrigerator, and baked as needed; custards or other desserts can be prepared in the morning and served thoroughly chilled for luncheon or dinner, thus adding to the pleasure of home-making all during the year.

"One of the most difficult problems the home-maker must solve is that of remaking left-over foods so that the tip-tilted noses of the family will not recognize them. Storage of left-over foods is facilitated by the use of covered refrigerator dishes. These may be purchased in a number of designs, gay colors, and materials. In selecting them, keep in mind the amount of space they will require, and the way other dishes or utensils will fit around them. Keeping cooked foods covered prevents their losing moisture and possibly flavor."—Zorada Z. Titus in the *Household Magazine,* July.

"History records the use of frozen desserts during the 10th century. Anna Comnena, in recording the colorful history which was being made during the reign of Constantine in Byzantium, relates an interesting social function. The ladies were arrayed in court dress and a day's outing was being enjoyed following a siege of the city. A frappe made of fresh cherries and snow which was brought from Mt. Olympus was served. Anna Comnena comments at length on the inconvenience of obtaining this snow and mentions other occasions when the supply was low and slaves were hurriedly sent for snow that a guest might be served chilled foods and frozen desserts."—*Progressive Farmer and Southern Ruralist.*

An Editor on Wheels

Stories of Interesting PLACES in the Refrigeration Industry

By GEORGE F. TAUBENECK

Mansfield, Ohio

It was like piling into a big, soft bed to alight from a tiresome train into the welcoming, homey, comfortable, old-fashioned atmosphere of Mansfield one night last week.

A college boy, laden with a monstrous golf bag and a well-stuffed gladstone, got off the car, dropped his bags, and raced into the arms of a waiting maiden. Came the girl's family, cordial and smiling, and the boy was bundled into a large sedan and whisked away.

A solitary taxi driver solicited my patronage. He had a shiny new Graham town car, in the back seat of which sat somebody's grandmother, his other passenger. I sat in the front seat with the driver.

Up hill and down dale we rode, traversing dimly lighted streets roofed by full-leafed trees, until we came to the old lady's home. One expected a candle shining in the window, but was satisfied with a pleasant porchlight.

After a cheery good-night to the old lady, the friendly cab driver proudly directed his new car over some more undulating streets, and deposited me in front of a clean appearing new hotel.

The hotel was in charge of two neatly dressed young men. They helped carry out the illusion that—although this was my first visit to Mansfield—I was coming home. It was just as if somebody they had known and liked for a decade had walked into their spick-and-span hotel.

After signing me into what he avowed was the room they had been saving for the Prince of Wales, the affable and youthful night clerk suggested that I might find good amusement at the dance marathon then in progress.

Preferring a solitary stroll to looking on while three-quarters-dead couples hang apathetically on each others' shoulders for hours on end, I set out to discover Mansfield.

As one might have expected, there were two "box-car" midnight lunch emporiums, and well patronized, too. Recalling warmly those cub reporter days when we used to dash out to a "box-car" for corn flakes and oatmeal cookies and coffee after the first deadline, I again felt at home.

Promptly at midnight all the street lights went out. In the moonlight one could see the brick paving, brick store fronts, and occasional imposing stone bank buildings.

Over the center of street intersections hung traffic signal lights, suspended from telephone poles. There were car lines, but no street cars running.

Of course there was a public square. Surprisingly, though, this one bore no court house or city hall in its center. There was a band stand (used, I was told, only on July 4 and other state occasions) a few small monuments to war heroes, cannon, benches, straggling hedge, and concrete walks. And an abundance of grass and old trees.

Most interesting was a large old fire bell, on which the first tocsin was rung long before the Civil War.

On one of the benches sat four boys. One played a Jew's harp rather expertly (which is a genuine accomplishment, ranking with diving backwards from a springboard, or playing a successful explosion shot with the new "fluff" ball). Another of the quartet sang mongrel ballads in time—but not in tune—with the Jew's harp, while the other two boys laughed softly.

This little scene was typical of one of the charming features of Mansfield—its citizens' utter lack of self-consciousness.

Occasionally a late straggler hurried through the little park which was the public square, but this well shaded and comforting plot of ground was nevertheless as quiet as a Quaker church-meeting.

We recommend it highly for those whose frazzled nerves demand respite from the city's rattle and roar.

Although some wise town assembly had seen fit to preserve the center of the public square from the inroads of any court houses, or city halls, the latter are not to be denied.

Directly across the street from this restful park, range a sturdy stone church, an ugly brick court house, and a city jail to match.

On the second story facade of the court house is a wooden American flag, lighted by colored Mazda lamps at night!

Even more interesting is the odd-looking garage, which was once a church to which early settlers in the Northwest Territory came.

A pair of energetic young fellows have now converted this solid and square brick structure into a car storage and repair shop.

A flight of steps to the door of the former church have been made into a steep ramp. The door is raised and lowered on a pulley.

Over the slate gray of the erstwhile meeting house, the new proprietors have painted great blotches of green and streaks of yellow. The combination of all these effects is startling, to say the least.

If one comes into Mansfield at night, sees the public square and the small business buildings, and notes the homely small-town atmosphere (yes, Mansfield has a Main Street), the morning after is a surprise indeed.

One discovers that Mansfield is an industrial city of some proportions, that it has acres and acres of factory buildings, that it has a civic pride comparable to that of Los Angeles or Dayton, and that it has a rhythm which is manifestly in faster tempo than that of the small town.

Mansfield is indeed a city.

For those who like quietude and peace, however, and who like the friendliness and hospitality of the hamlet, Mansfield has much to offer.

By day it is busy and bustling, as much a part of modern industrial civilization as conveyor lines and electric power.

By night Mansfield's historic past rises up from the ground, and the city once again becomes the town where true Southern hospitality joined hands with the open friendliness of the West and the common democracy of the frontier to create a feeling that here was the apotheosis of Home.

* * *

Chicago, Ill.

Judging by the number of art shops, bookstores, and collector's nooks in Chicago, plenty of surplus money is available. Smart gown salons are also numerous, and their prices fancy.

These types of marts survive and keep yachts afloat, not because of their great quantity of sales, but because of their shrewd buyers and their high, wide, and handsome margins of profits.

On Michigan avenue near the Art Institute is strung along a series of small art galleries. Present, also, are counters of rare pottery, and antique stores—one flight up.

In the art galleries just now are stacks upon stacks of eighteenth century vintage chromos. They're all the rage in Chicago this spring, proprietors say. Etchings, however, are as much in demand as ever.

It might be remarked, also (although you probably know it), that 1931 is proving to be a banner year for the electric refrigeration industry in Chicago. Distributors in the Windy City seem to have the world by the tail, going down hill.

Letters From Readers

Indianapolis, Ind.

Editor:

The Sally Lee Frigid Meat campaign is still in progress, although since your visit here, very little new developments have occurred.

Sales continue at the same level, boxes are operating satisfactorily, and the customers are apparently pleased with the products.

The most interesting recent experiment is the use of a large meat chart of all our cuts, shown in natural colors. These charts will be distributed to our dealers within the next few days, and we expect considerable sales help from them.

This is of course, another rather radical step in our effort to avoid the large expense involved by the purchase of actual display cases, as we feel that these meat charts will to some extent take the place of a real display.

Should anything new develop, we shall be glad to advise you.

LOUIS F. THOMPSON.
Indianapolis Abattoir Corp.

A PAGE FOR HOME SERVICE WOMEN

DR. STANLEY TELLS RESULTS OF TESTS

DETROIT—Dr. Louise Stanley, chief of the United States Bureau of Home Economics, speaking before the food and nutrition division of the twenty-fourth annual American Home Economics Association held here from June 26 to 29, outlined the results of a recent experiment concerning the preservation of meats in the household refrigerator, conducted with the assistance of Miss Anna Pabst, also of the bureau.

The study was undertaken to determine the temperatures to be recommended for home refrigeration of meat in order to keep spoilage as low as possible. It was hoped that a rapid method for determination of progress of spoilage might be obtained with some measure of degree of penetration of such spoilage, and information as to whether penetration was in form of bacteria or decomposition products.

The meat used was a good grade of market top round beef from inspected and approved animals. It was purchased from regular markets, and was selected and cut under conditions similar to those of a high class market doing both wholesale and retail business.

Different Temperatures Used

"As soon as the sample reached the laboratory," Dr. Stanley explained, "it was cut in three-inch cubes, and two cubes of this meat—one in a covered and one in an uncovered dish—were stored at temperatures of 35, 40, 45, 50, and 55 deg. Preliminary studies were made of each cube, and daily tests were conducted for four days.

"The samples used for bacteriological determinations were composed of small portions from 10 different locations on the surfaces of the cubes. The samples were weighed and one gram was mixed with sterile sand in sterile mortars, and results tabulated."

They showed that bacterial development was markedly checked at temperatures of 40° and below, that there was a moderate increase at temperatures up to 45°, that there was a decided increase at temperatures of 45° and above, and that the growth was greater in covered than in uncovered dishes. The increase corresponds to that produced by approximately five degrees in temperature.

Dr. Stanley stated that these studies are in agreement with those of other workers in showing that bacterial counts in meat samples vary so much with conditions of growth that they constitute an inexact method of determining spoilage.

Results of 12 series of tests as tabulated together made a more uniform curve than those of a single series. The authority accredits this to the unevenness in distribution of bacteria in the meat and their tendency to form pockets or clumps, the variation in moisture content, and changes in the character of the organisms.

The average change in hydrogen ion concentration of the 12 series was of the same character as the bacterial count, but showed the same variation in an individual series. The average values of both the hydrogen ion and bacterial counts show the general trend of the advancement of spoilage and suggest possible explanations of the changes taking place. Neither bacterial count nor the hydrogen ion test alone can be taken as a measure of degree of spoilage or quality of meat.

"Results showed," said Dr. Stanley, "that the methylene blue test was of no practical value, since it was affected by the uneven distribution of bacteria, changes in the predominating type, and variation in the hydrogen ion and the presence of enzymes. The ammonia test was not obtained until spoilage was so far advanced as to be perceptible both by sight and odor.

Penetration by Bacteria

"Histological studies were made to determine whether the bacteria penetrated the meat or remained largely on the exterior," the speaker said. "A sample held in an uncovered dish at 55° for four days indicated considerable penetration, but a drying out of the surface, with a more compact structure resulting.

"A comparable sample refrigerated at the same temperature in a covered dish showed less firm meat structure and a higher degree of penetration, not only along the outer fibre spaces, but into the fibre spaces themselves. The more broken down condition of the fibres seems to indicate decomposition taking place under these conditions.

"Studies to determine the amount of such penetration show the number to be relatively small in comparison with the number found on the exterior of the meat, but of more homogeneous character, being protiolytic in nature."

Dr. Stanley, in her conclusion, cited the fact that the tests were of special value in that they indicated a need for a more detailed study of types of bacteria.

Large Group Hears Field Leaders

(*Concluded from Page 1, Column 5*)

and Miss Josephine Walther, associate curator of American art, the Detroit Institute of Arts.

Wilbur M. Brucker, governor of Michigan, addressed an audience of 1,000 at the first general session of the convention Tuesday night.

His subject was the relation of the state to the home, and in his speech he pointed out that government and the home are bound to each other by the former's obligation to protect the home, while the latter should make unceasing efforts to instill qualities of good citizenship in its members.

Frank W. Cody, superintendent of schools, and F. J. Kelly, chairman of the education section of the White House conference on child health and protection, gave other addresses during the evening.

A part of the morning of Wednesday, June 24, the third day, was given over to addresses by members of the professional department of the association. They discussed chiefly home economics in colleges and universities, in elementary and secondary schools, and extension of the science of home economics generally.

Further discussion held by the division on home economics in business featured eight addresses on varied phases of the subject—research in educational institutions, other forms of research, sales, advertising, production, publicity, education, and reading and writing.

Institutional Economics

Under the heading of institution economics, three addresses were given by Miss Elizabeth McCarroll of the Maramor tea room, Columbus, on the college training of women for the restaurant business; by Miss Marie Casteen of the Hotels Statler Co. on the new science of hotel cookery; and by Alex Trout of Detroit on self-financing dormitories.

A short research meeting closed the morning's reports and lectures, while the afternoon was given over to social activities.

Thursday was a busy day, for there were five series of round table discussions held in addition to luncheons, breakfasts, and routine business meetings.

The discussions concerned family economics, family relationships, the house, textiles and clothing, and food and nutrition, the latter being one of the most extensive from standpoint of attendance and number of reports.

Food and nutrition talks included a report by Dr. Louise Stanley, chief of the United States Bureau of Home Economics, on preservation of meat in the household refrigerator; discussion of a food selection score card by Miss Susan Mathews of Georgia State College of Agriculture; and standards of the nutrition program sponsored by the American Red Cross, explained by Miss Helen Mitchell of Battle Creek College.

Other subjects reported upon included soy bean oil as human food, vitamin D content of eggs, heat stability of vitamin B2 of milk, two methods of roasting cuts of meat with regard to palatability and cooking losses, and variations in pastry baked on utensils of different materials.

Professor Phelps Speaks

Twelve hundred persons heard William Lyon Phelps, professor of English language and literature at Yale University, and Royal B. Farnum, educational director of the Rhode Island School of Design, when they addressed the second general session Thursday night, June 25.

Prof. Phelps declared that without the family, nothing could survive, that the home is the very life of present-day civilization.

Forty-three talks and reports comprised the eight division sessions held on Friday. Topics included institution economics, colleges and universities, elementary and secondary schools, home economics in business, research, extension, social service, and student clubs.

At the luncheon conference on standardization and the homemaker held Friday noon, P. G. Agnew, secretary of the American Standards Association, spoke upon the subject, "How the Homemaker May Benefit by Standardization."

Announcement of new officers for the ensuing year was made at the council meeting in the afternoon. They are as follows:

President, Frances Swain, director of home economics in the Chicago public schools and president of the association during the past year; vice president, Margaret Edwards, head of the home economics department at Alabama College for Women; secretary, Dr. Marie Dye, dean of home economics at Michigan State College; councilor-at-large, Dr. Henrietta Calvin, director of home economics in the Philadelphia public schools; controller, E. Agnes Donham, budget specialist, author of "Spending the Family Income," and lecturer at Simmons College, Boston; treasurer, H. Gale Turpin of the Baltimore Trust Co.

EDNA SPARKMAN WITH WESTINGHOUSE STAFF

MANSFIELD, Ohio—Edna I. Sparkman, former member of magazine and newspaper home economics staffs, and radio lecturer for the Women's Radio Institute, has been appointed to the

Edna Sparkman

home economics staff of the merchandising department of the Westinghouse Electric & Manufacturing Co. She will be in charge of refrigeration home economics activities.

'Americanize Hotel Menus'—Casteen

DETROIT—Development of a new science of cookery in hotels—to serve American food for American people, and to make European chefs combine their inherent "skill de cuisine" with the common sense of the American housewife in food preparation is the foremost problem now confronting managers of hostelries throughout the United States.

"And solution of this problem is by no means a simple task," asserted Miss Marie Casteen of the Hotels Statler Co. in an address given before the institution economics division of the American Home Economics Association during its six-day convention here in the last week of June.

"The rapid expansion and development of industrial life has brought thousands of people into the cities, and this type of business has demanded food of the plain, well-cooked, 'home' variety," Miss Casteen pointed out.

"Then, too, educational facilities have caused the people to take more interest in nutrition, and diets that promote physical well-being. Generally speaking, the people who patronize restaurants lead a sedentary life, and rich, heavy food is distasteful to them."

The speaker stated that a gradual progress is being realized by combining all modern scientific knowledge of cookery with the skill and artistry of the "old masters," although oftentimes this is no easy task, for the chefs cling tenaciously to their love for dishes that are more pleasing to the eye than the stomach.

Gradually, however, these lords of the kitchen are developing a certain respect for American foods, and are beginning to draw upon the cook books of the common people for ideas and suggestions.

Experimental kitchens are being conducted by large hotel systems, where new dishes are thoroughly tested before being submitted to patrons. The kitchens are producing lighter entrees, home type desserts, and salad and sandwich plate specialties. They also have led to condemnation of the practice of preparing food far in advance of the time when it is to be served.

COLD FOODS INTEREST NEW ORLEANS WOMEN

NEW ORLEANS—A "Cold Cookery school," was held by the refrigeration department of the D. H. Holmes store here, June 16 to 18, under the supervision of Miss Helen Gwin, of the Knox Gelatin Co.

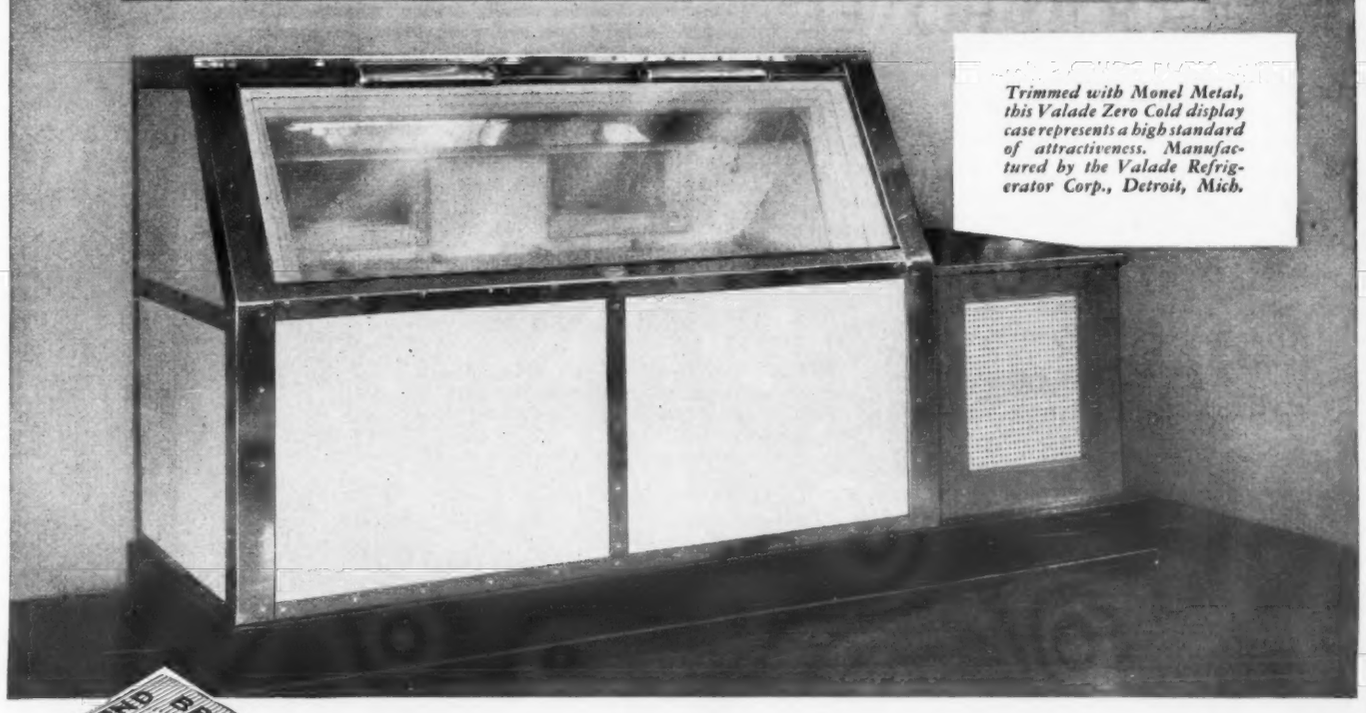
Miss Gwin's first lecture included preparation and freezing of a fruit salad. Recipe books distributed to members of the audience enabled them to readily follow Miss Gwin's directions.

Cleverly constructed boats of banana skins to hold the fruit salads, revealed a surprisingly new use for the wrapping of the banana. A small sail of white paper attached to the mast of the little boat bore messages such as, "A sail of Happiness," "Pleasure Boat," etc.

Another idea was a hollowed out apple, a clown's face carved on one side, a match in his perky mouth which, when lighted, gives an altogether comical effect. The apple contained fruit salad.

Valade shows how

MONEL METAL *modernizes* frozen food display



Trimmed with Monel Metal, this Valade Zero Cold display case represents a high standard of attractiveness. Manufactured by the Valade Refrigerator Corp., Detroit, Mich.

DIAMOND BRAND HAS NO EQUAL

PRODUCTS as modern as the new quick frozen foods deserve to be merchandized in a modern way. That means eye-compelling, appetite-tempting display. And that's why leading manufacturers—Valade, for example—trim their display cases with lustrous, wear-resisting Monel Metal!

From the standpoint of appearance, cleanliness and durability, gleaming Monel Metal provides the ideal setting for frozen foods. Its platinum-like beauty is in keeping with the modern trend toward non-rusting, corrosion-resisting white metals. Its glass-smooth surface is extremely easy to keep spick and span at all times. And since Monel Metal is a solid Nickel alloy, it is strong as steel, with no coating to chip or crack...nothing to wear off. Monel Metal trim lasts as long as the display equipment it beautifies.

Whether you make, sell or use display equipment, it will pay you to specify Monel Metal brightwork because "Nickel Alloys Look Better Longer".

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.

Monel Metal is a registered trade mark applied to a technically controlled nickel-copper alloy of high nickel content. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

INCO MONEL METAL

A HIGH NICKEL ALLOY

MONEL METAL

NICKEL ALLOYS LOOK BETTER LONGER

GROCERS LEARN OF FOOD MAINTENANCE

LOS ANGELES—Lectures on the principles of refrigeration and instruction in frozen food maintenance form a definite part of the course of study given for certified independent grocers under the auspices of the Southern California Retail Grocers Association.

These lectures are given for the most part by George Lindahl of the City Refrigerator Co., and according to C. R. Rettberg, educational director of the Association, three out of 10 grocers from the first of these merchandising classes have installed new refrigeration in place of the old.

In his lectures Lindahl tells the food retailers that investment should be made in refrigeration to secure the maximum sales per customer and that equipment must be kept down to a mimimum consistent with proper refrigeration.

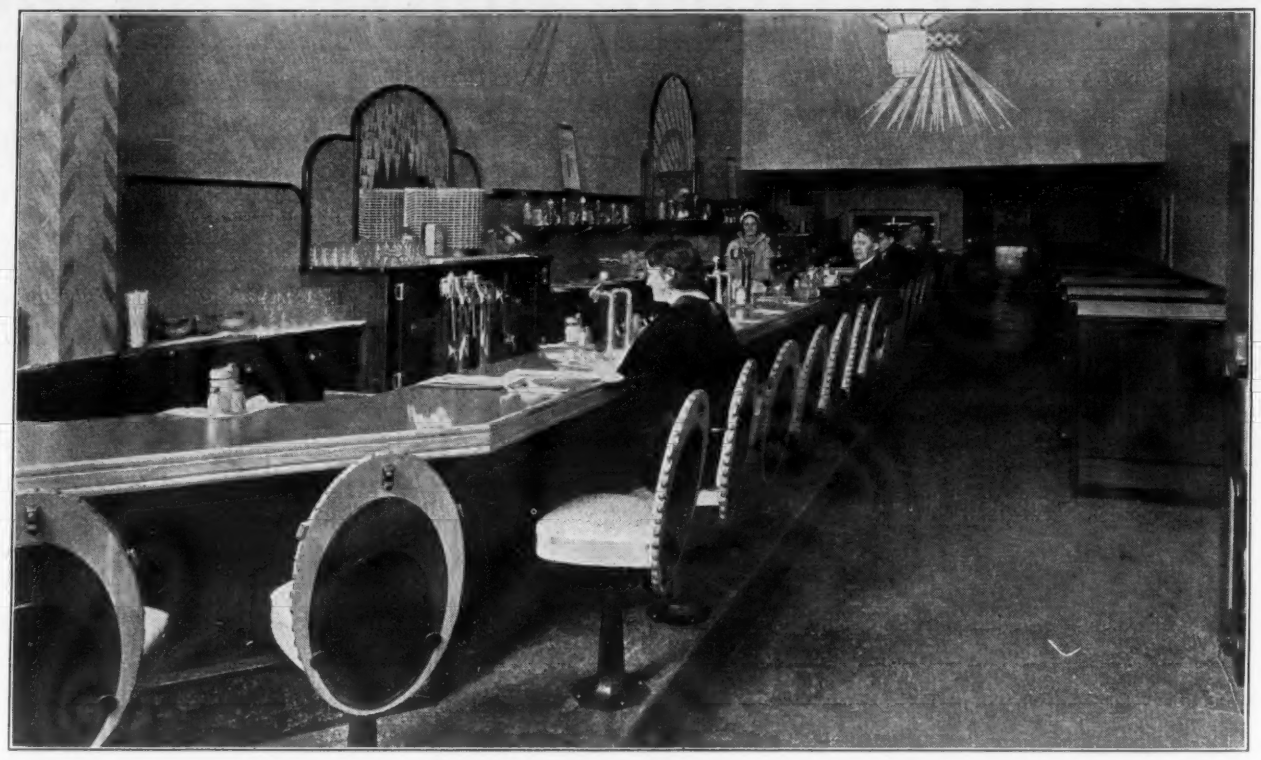
"To secure maximum return," he says, "these rules must be observed: Complete varieties of perishables must be kept on display. Good qualities must be selected and maintained. Prices must be reasonably competitive. Displays must be kept clean, attractive and appetizing. Refrigerated display must be kept in a prominent position.

"Many merchants," he says, "hide their refrigerated display by placing it in the rear part of their store where only a small percentage of their customers can see it. If every merchant would realize that the perishable department is the backbone of any general food business, he would not hide his refrigerated display. Place this display out in front where it belongs," he advises the merchant students.

"Proper refrigeration," he continues, "will reduce the labor in the perishable food department more than 50 per cent, for the reason that with all perishable foods in one refrigerated display, there is no lost motion in running back and forth from storage box to display case."

In discussing frosted foods before the grocers' class, methods of freezing foods are described and the benefits to the grocer from the sale of frosted products are outlined.

Cafe Operates $4,000 Cooling System



Colored refrigerators protect the foods served in the Simmons Coffee Shop.

REFRIGERATING EQUIPMENT MATCHES SHOP'S INTERIOR

LOS ANGELES—Refrigerating equipment installed in the Simmons Coffee Shop here by the commercial department of the George Belsey Co., General Electric distributor, at a cost of $4,000, is finished in color to conform with the modernistic atmosphere, which marks the coffee shop's interior.

In the fountain room, two General Electrics serving as back bars and used for storing salads, desserts, are finished in cream and walnut. The refrigerating units on the top are cream colored. Glass doors in both of the bars make it possible for patrons at the fountain to view the enticing cold foods, which are stored in both of the refrigerators behind the counter.

Underneath the counter, a DP-3 cooler takes care of the demand for cold water. In the kitchen, two General Electric refrigerators are used for storing foods required in the preparation of the meals.

DEALER HAS FREEZING SYSTEM ON DISPLAY

AKRON, Ohio—(UTPS)—Twelve kinds of ice creams are made each day in the display window of the Blue Hill Ice Cream Shop and stored in Copeland Consolidated cabinets, also used in the display compartment. This new ice cream shop was opened recently by G. A. Postum in the neighborhood business section of the fashionable West Hill district of Akron.

J. S. Coulter, Akron manager of Copeland agency, equipped the shop with one Copeland condensing unit, one 12-hole ice cream cabinet and a compressor operating a 200 gal. brine tank also installed in the display window.

Though Postum has been operating less than a month, his sales of French ice cream have taxed his initial installations and he is contemplating adding more Copeland equipment.

"Folks seem to like to see how ice cream is made," Postum explained as he poured the yellow cream from containers into his freezer before the inquisitive eyes of shoppers, who had stopped to watch.

"People believe what they see," Postum continued, "they watch me make ice cream before their very eyes and see that only pure cream, sugar and fresh fruits go into the cream they can buy here or have delivered to their homes."

COAST COMPANY TO OPERATE STATE OWNED TERMINAL

SAN FRANCISCO — (UTPS) — The Board of State Harbor Commissioners has assigned the operation of the State Products Terminal which includes the State Refrigeration Terminal, to the State Terminal Co., Ltd., of which H. B. Mills is president and H. F. Hiller, vice president.

Mr. Mills has been prominently identified with the shipping and export business of the coast for the past 25 years.

MARION SAWYER HOSTESS TO VISITING ECONOMISTS

DETROIT—The fact that Marion F. Sawyer was chairman of the Detroit group of the Business Section of the 1,600 women attending the American Home Economics Convention held here last week, led to several social affairs and entertainments at which Miss Sawyer, representing the Kelvinator Corp., was hostess, assisted by Gertrude Janssen, Kelvinator home economist and Norma Collinson, secretary to the president.

The first of these affairs was a trip out to Greenfield Village. There followed breakfast at the Book Cadillac hotel Thursday morning, after which the party motored to the Kelvinator factory.

Thursday afternoon 100 of the members of the Business Section of the association were given a luncheon at the Detroit Yacht club, after which they were taken for an all afternoon yachting trip on Lake St. Clair.

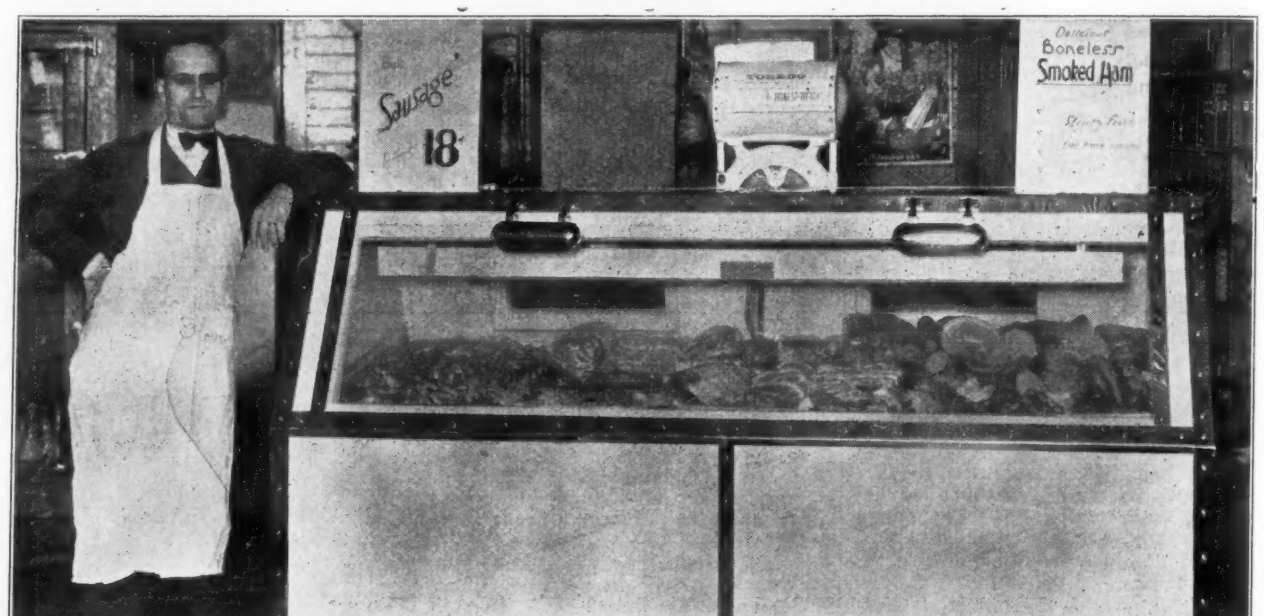
TAKES NEW POSITION

CHICAGO—Severing her connections with R. Cooper, Jr., General Electric refrigerator distributor, Miss H. Ratcliffe has joined the staff of Frank H. Johnson-Son-Crowen, Inc., distributor of the Westinghouse refrigerator.

DEPRESSION DINNER

NEW YORK—A new table d'hote which includes all you can eat for 60 cents is being tried by the Childs' restaurants in this city.

Grocer Wakeen Buys Equipment



LaCrosse grocer purchases Kelvinator system to cool McCray and Hussman equipment.

LACROSSE FOOD MERCHANT TURNS TO REFRIGERATION

LaCROSSE, Wis.—For eleven years a user of ice, A. J. Wakeen, who operates a grocery store in this city has changed over to electric refrigeration.

The Northern States Power Co., local distributor for Kelvinator, recently equipped his store with a ¾ hp. condensing unit.

This takes care of a new Hussman display counter with base refrigeration. Three Kelvinator cooling coils operate the counter and a McCray refrigerator.

J. C. Collins, Northern States Power Co. representative, has also recently sold Kelvinator equipment to the Vogel Market, Anderson Grocery, Monsoor Grocery, Silver Grill Cafe, and Wienke's Grocery.

Representative O. H. Schultz has sold Kelvinator equipment to Abicht Grocery, Ross Grocery, Ikert's Grocery, and the Beyer and Mashak Dairies.

Since February 15, these men have sold more than 70 individual units.

BIRDSEYE FOODS NOW SOLD IN 65 EASTERN TOWNS

(*Concluded from Page 1, Column 1*)

nedy & Co., Inc., Malden; T. J. Crossman Co., Inc., Needham; S. K. Ames, Inc., Newton; Frank Frost & Co., Newton Centre; H. A. Bradford, Plymouth; C. L. Burch and Son, Provincetown; G. H. Atkinson Co., Reading; F. D. Rand & Co., Roslindale; Kennedy & Co., Inc., Salem; Thrift Stores, Springfield; Kennedy & Co., Inc., Waltham; H. & K. Grocers, Inc., Wareham; Community Stores Co., and Protective Union Co., Worcester; S. K. Ames, Framingham; Kennedy & Co., Inc., Quincy; Fred Wedgener, Winthrop.

Connecticut — Wilson Bros,, Chester; Cohen Bros., Greenwich; E. G. Holbrook & Son, Inc., Madison; A. T. Otis & Son, Norwich; Paul Schepis, Stonington; F. A. Clarke, Middletown.

Rhode Island—A. S. Bunn & Co. and Kennedy & Co., Inc., Providence; The Rumford Store, Rumford.

New Hampshire—O. A. Brown, Ashland; Sunset Grocery Co., Milford; Blanchard's Boston Branch Store; Nashua; F. B. Oakman, West Swanzey; S. K. Ames, Inc., Portsmouth; M. V. Field, Woodsville; A. W. Guyer, Hanover; D. Volpe, Plymouth.

Vermont—The F. D. Ladd Co., Barre; J. E. Bushnell, Brattleboro; Home Town Food Market, Burlington.

New Jersey—J. Schaaf, East Orange.

NEW YORK CLUB ORDERS ADDITIONAL EQUIPMENT

NEW YORK CITY—The financial district's Downtown Association, at 60 Pine St., recently placed an order calling for Frigidaire installation to supplement a smaller quantity of Frigidaire commercial equipment already in operation.

The order, which was obtained by B. P. Hill, calls for eight compressors, 10 coils and a four-hole ice cream cabinet.

"The Nearest GOOD HOTEL"

. . . is one way of designating Hotel Fort Shelby when you arrive in Detroit. ¶ No other large hotel is so close to the principal railway terminals, airports and steamship piers . . . so conveniently located to Detroit's shopping, theatre, financial, insurance and wholesale districts and more universally known for its good food, rooms and service at economical rates. ¶900 units . . . all equipped with servidor and private bath. Rooms as low as $3.00 per day . . . suites $10.00 and upwards.

Motorists are relieved of their automobiles at the door without service charge. Write for free road map, and your copy of "Aglow with Friendliness," our unique and fascinating magazine.

HOTEL Fort Shelby

E. J. BRADWELL, Manager

DETROIT

" AGLOW WITH FRIENDLINESS "

Radically different in design, construction and performance, Carbondale Excelsiors have set new standards for the industry—new and more attractive sales opportunities for refrigeration dealers. Cash-in on commercial refrigeration! Write TODAY for full information!

THE CARBONDALE MACHINE CO.

Main Offices: Carbondale, Pa.

Address inquiries to Excelsior Division, South Norwalk, Conn.

SPEAKER FLAYS FADS IN PURCHASING FOODS

DETROIT—The American public, in making food purchases, is inclined today to carry the health idea to an extreme, and to lose its sense of proportion in any matter in which health is supposed to be involved.

This was the statement made by Wells A Sherman, specialist in charge of the fruit and vegetable division of the U. S. Bureau of Agricultural Economics, when he spoke before the food and nutrition division of the American Home Economics Association convention held in Detroit, June 22 to 27.

"America's food supplies, both actual and potential, so far exceed her needs that the food purchases of the average American have not been based upon necessity, but upon choice and fancy," he said. "Some local food habits inherited from earlier days persist with surprising tenacity, although they are no longer either necessary or economic."

The speaker explained that in recent years the American public has spent a surprisingly small proportion of its total income for food. At the same time, the nationwide distribution of even the most perishable food products has brought an unprecedented wealth of choice to the very doors of most American families.

"Relieved from the necessity of giving first place to economy in food purchases, the American public has been quick to respond to the health appeal, and the consumption of a number of articles has shown a phenomenal increase because these particular foods have been recommended by physicians and dietitians," Mr. Sherman stated. "But all too often, the public becomes extreme in matters of food selection wherein it is merely assumed that health is involved."

Continuing, the specialist stated that the habit of selecting raw food products by the eye rather than on the basis of actual economic or dietetic value makes it impossible to establish grades for fruits and vegetables based upon their ultimate utility.

Commercial grades must reflect commercial values as they exist. Therefore, many fruits and vegetables fall into a higher or a lower grade from reasons which have nothing to do with ultimate usefulness.

Mr. Sherman pointed out that the preference for or the prejudice in favor of bunched vegetables with tops attached, or against equally sound, wholesome, and useful trimmed or stored vegetables results in the shipment of thousands of tons of vegetable foliage which finds its way into the garbage can, but increases the freight and handling costs on those parts which are actually consumed.

"It would appear," he concluded, "that a considerable economy will be possible when consumers can be persuaded to buy fresh vegetables solely with reference to those parts which are to be eaten, and to learn to distinguish the fresh and the sound from those which are wilted or otherwise undesirable without the aid of a large quantity of useless tops or wrapper leaves.

COULTER REPORTS GAIN IN COMMERCIAL SALES

AKRON, Ohio—J. A. Coulter, manager of the Akron Copeland agency, reports a gain in commercial sales for the month of June.

Sales of commercial units include a 6x8 walk-in box and a 10 ft. display case to the Vito-Spero Grocery of Akron, which added meats to its grocery line.

Copeland's first floral display case sold in Akron was purchased by Mrs. C. W. Goodyear. A walk-in box was installed in the Walsh Bros. restaurant on South Main St.

A model Q Copeland compressor, a Seeger cabinet and a bottle cooler were sold to the Airport Golf clubhouse near the Akron airport.

1930 FROZEN STRAWBERRIES SOLD IN CANADA

EBURNE, B. C.—The MacKimmon Canning Co., Ltd., is marketing strawberries frozen last season, and which are finding a ready sale in Canada. In nearly every store on the lower mainland of British Columbia, this product is being sold.

The strawberries are grown in the territory surrounding Vancouver, and are washed and prepared especially for freezing, pure cane sugar being the only ingredient added. Containers of several sizes are used to put the fruit in, the most popular being the 1-lb. cardboard carton with a printed design.

TWO COMPANIES OFFER TO BUY SEATTLE DAIRY

SEATTLE, Wash.—Offers for acquisition have been received by the Consolidated Dairy Products Co. here from both the National Dairy Products Corp. and Beatrice Creamery Co.

National Dairy offered the equivalent of about $9.93 a share after an offer equivalent to about $8.45 a share by Beatrice Creamery. A stockholders meeting was held May 25, following a failure to obtain a quorum on May 13.

Efficient arrangement gives easier handling. Rear view of the Hill Display Case.

Armstrong's Corkboard guards Display Case approved by leading distributor

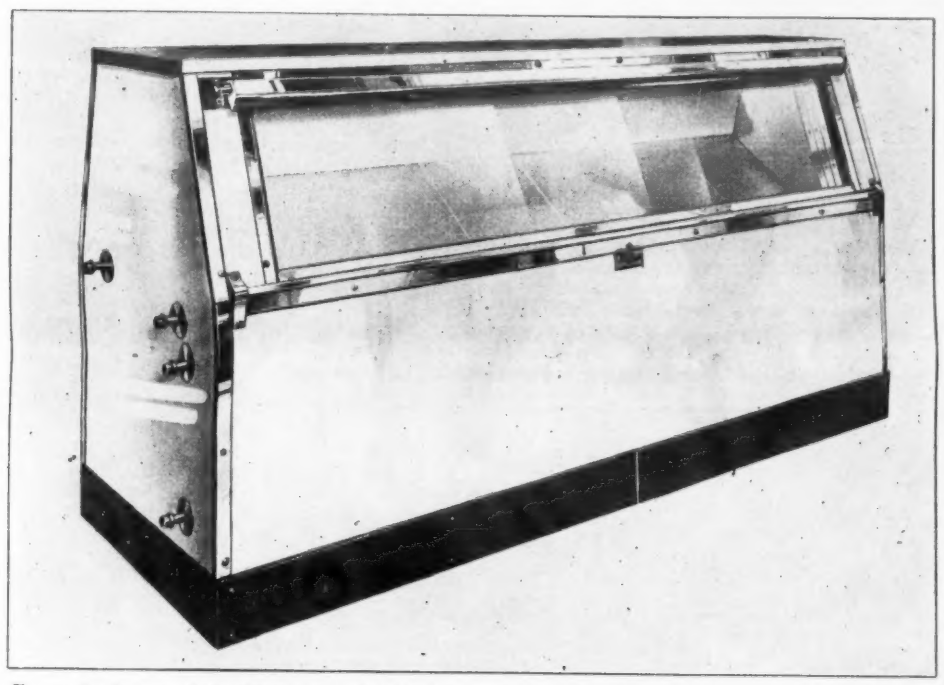
COMPLETE approval has been awarded this Hill Display Case by a leading distributor of quick-frozen products. After thorough tests, this distributor announces that it is completely *safe* for frozen foods.

The Hill case is insulated with Armstrong's Corkboard. Hill, like other manufacturers of commercial refrigerators, has proved that cork is the safe insulation. Cork's thermal conductivity is low. The cabinet insulated with Armstrong's Corkboard is economical to operate. More than that, cork resists moisture. Properly sealed, it lasts through years of the hardest service. And its rigid strength stands the vibration of slamming doors without settling.

To cork's recognized efficiency, Armstrong's new Type LK Corkboard adds the advantages of exceptionally light weight and lower conductivity. Combined with light weight is a coefficient of thermal conductivity of only .263 B.t.u. per square foot, per inch thickness, per degree Fahrenheit temperature difference, per hour, at 60° F. mean temperature.

We will gladly tell you more about how Armstrong's Corkboard provides safe insulation for low temperature cabinets. And we'll send you samples of the new Type LK board if you wish to make tests. Armstrong Cork & Insulation Company, 917 Concord Street, Lancaster, Penna.

Armstrong's A Product



Frozen foods are safe in this commercial display case, insulated with Armstrong's Corkboard. Made by C. V. Hill & Company, Trenton, N. J.

★ *Star these 6 questions when you buy insulation:*

* Is it an efficient barrier to heat?
* Will it resist moisture?
* Will it serve without warping, shrinking, buckling, or settling?
* Will it resist decay and deterioration?
* Has it structural strength?
* Is it permanently reliable?

AT YOUR SERVICE

Twenty-eight Armstrong Cork & Insulation Company branches at the following cities are ready to serve you. See Telephone Directory for street address of the branch office nearest you.

Albany, N. Y.; Atlanta, Ga.; Birmingham, Ala.; Boston, Mass.; Buffalo, N. Y.; Charlotte, N. C.; Chicago, Ill.; Cincinnati, Ohio; Cleveland, Ohio; Dallas, Tex.; Denver, Colo.; Detroit, Mich.; Grand Rapids, Mich.; Houston, Tex.; Jacksonville, Fla.; Kansas City, Mo.; Memphis, Tenn.; Milwaukee, Wisc.; Minneapolis, Minn.; New York, N. Y.; Omaha, Neb.; Pittsburgh, Pa.; Rochester, N. Y.; St. Louis, Mo.; Syracuse, N. Y.; and in Canada—Montreal, Toronto, Winnipeg.

Armstrong representatives are located in the following cities: Baltimore, Md., John R. Livezey; Los Angeles, Cal., Gay Engineering Corporation; New Orleans, La., H. T. Steffee; Philadelphia, Pa., John R. Livezey; Spokane, Wash., D. E. Fryer & Company; Portland, Ore., Gillen-Cole Company; San Francisco, Cal., Van Fleet-Freear Company; Seattle, Wash., D. E. Fryer & Company; Washington, D. C., John R. Livezey.

Armstrong's TYPE LK Corkboard Insulation

Efficient and Practical Insulation for Refrigerating Equipment

RETAIL GROCERS PLAN ANNUAL CONVENTION

(*Concluded from Page 1, Column 3*)

cation of Grocery Trade Exposition and the Milwaukee modern food market. Officials of the federal, state, and municipal governments will participate. The general management of the exposition is in the hands of John F. Widenmann, exposition and food show director of the National Association of Retail Grocers.

2 p. m. Addresses of welcome and responses. "The Public Be Served," by Katherine A. Fisher, director Good Housekeeping Institute; "There is but One Measure," by Clarence Francis, president, Associated Grocery Manufacturers of America, Inc.; "The Organized Canned Foods Industry and its Responsibilities," by Francis A. Harding, president, National Canners' Association; "The Wholesale Grocer Must Continue," by Carl H. Schlapp, president, National Wholesale Grocers' Association; "The Broker and His Relation to the Retailer," by Samuel T. Millar president National Food Brokers' Association; and other speeches. Governor La Follette will close the session with an address.

7:30 p. m. Annual banquet of the Asparagus club, Schroder hotel.

Tuesday, July 7

9 a. m. Call to order; invocation; reports by state presidents; consideration of committee reports, including the following: credentials, trade relations, legislative, consumers cooperative transportation and European tour, Chamber of Commerce of the United States, and resolutions.

11:30 a. m. "The Quest for Elimination of the Cost of Distribution," by Sidney Anderson, Minneapolis.

1:30 p. m. Report of executive committee, Grocery Trade Practice Conference; Federal Trade Commission and Trade Practice conference. Address: "Trade Practices that Add to the Cost of Distribution." An address by Senator Nye will close the session.

5 p. m. Automobile sightseeing tour of Milwaukee.

8:30 p. m. Guest night festival and entertainment in the Auditorium.

Wednesday, July 8

9 a. m. "The Supremacy of the Independent," by M. M. Zimmerman, New York City; "The Greatest Evil of Them All," by Hon. Clyde Kelly, member of congress from Pennsylvania, co-author of the Capper-Kelly bill; "In Our Hands," by Secretary-Manager Janssen; nomination of officers; reports of credentials and resolutions committees.

2 p. m. Group conferences on retailer cooperative enterprise and other topics, led by representative retail grocers.

7 p. m. Annual convention banquet, at Eagles club. Address by spokesman of European delegation of grocers.

Thursday, July 9

9 a. m. Selection of 1932 convention city.

1:30 p. m. Final reports of various committees. Election and installation of officers.

Accuracy Improves Food Advertising

DETROIT—That the days when food advertising was ballyhoo and quackery are forever gone, and that today it must have the scientific accuracy of a laboratory textbook, combined with the charm of Aunt Jenny's secret recipe for chocolate fudge cake, was the assertion of Mary Dahnke of the Kraft Cheese Co., Chicago, in an address before members of the American Home Economics Association, meeting for their annual convention from June 22 to 27 in Detroit.

"Essentially," she stated, "the duty of the home economist in the food advertising field is to amplify the neighbor-to neighbor, back-fence chatter about foods which has always been a favorite pastime of women. She stands in the position of woman to woman, with every potential reader of advertising copy, every prospective user of the food product. Hers is the personal touch, with that elusive and potent 80 per cent of the buying world—women.

"The need of a director of home economics in every food concern where advertising is prepared by the copy department of a large agency is becoming more insistent every day," Miss Dahnke said. "We have all seen difficulties arise in the past because of the lack of adequate home economics activities in large food concerns.

"The average copy, several years ago, was prejudicial and unfair in competition, with the result that its bad effect has taken years to overcome. The home economist has done much to change the spirit of competitive food advertising. She instigates constructive campaigns, and thereby benefits her company, her advertising, and the ultimate consumer.

"Standing as the home economist does for definite advertising ethics today, with her insistence upon strictly accurate food information, with her constant food research, she has done much to increase national good faith in advertising," the speaker declared.

Agnew Urges Application of Science To Household Appliances

DETROIT—Application to such lowly household implements as can openers and paring knives of the type of scientific and engineering skill responsible for the development of 100,000 hp. turbo-generators was urged upon home economists Friday, June 26, by Dr. P. G. Agnew, secretary of the American Standards Association.

Speaking before a conference on "Standardization and the Homemaker" at the twenty-fourth annual meeting of the American Home Economics Association, Dr. Agnew advised the group to prepare a five-year plan for research and standardization aimed to bring to the ultimate consumer improvements and economies in hundreds of common commodities in which development has lagged behind other technological advances because of the lack of organized consumer effort.

The plan should include the training, among American home economists, of technical specialists capable of dealing in the laboratory with engineering aspects of the design of kitchen equipment, household appliances, clothing, and other textile articles.

It would include activities by teachers of home economics and their classes, technical and research organizations, agricultural groups, women's clubs, and other bodies. It would involve extensive cooperation with retailers, wholesalers, and manufacturers in developing and supplying the types of commodities required by consumers, as the result of scientific investigation of design and utility.

"The possibilities of your objective, if it can be attained," Dr. Agnew said, "are fascinating. They would constitute a major advance in our national economy. At the present rate of technological and administrative advance, our production per man-hour will double within two or three decades. This means increase of production great enough to raise the standard of living of the whole population to the present level of the middle classes.

"This is provided the gain in productive power is not dissipated through increasing costs in distribution, or otherwise," the speaker reminded his hearers. "The ratio of the cost of selling goods to the cost of making them has been steadily increasing for many years. In most lines, the retail link of the distribution chain absorbs at least 40 cents of the consumer's dollar.

"In contrast, many corporations are, through standardization technique, making their purchasing comparable in efficiency with their production methods; your problem is to do something comparable in the field of ultimate consumer purchases."

EIGHT CARLOADS SOLD BY DEALER IN 30 DAYS

ALBANY, N. Y.—Eight carloads of Majestic refrigerators sold in 30 days was the record recently established by the Ignition Service and Supply Co., Inc.

According to H. J. Zehner of this company, a series of cooperative demonstrations conducted in the Capitol district by Mrs. Myrtle S. Dodds of the Knox Gelatine Co. helped materially in boosting sales.

The entire series of demonstrations occupied a period of 10 weeks in New York towns. In one of the last demonstrations conducted in Schenectady, two women ordered refrigerators immediately after Mrs. Dodd's demonstration.

ICE CREAM PRODUCER EQUIPS RETAIL STORE

MT. CLEMENS, Mich.—Six different temperatures are maintained in the refrigeration equipment used in the new soda fountain and lunchroom owned by J. Fleming of this city. Along with the retail ice cream business, Mr. Fleming has built up a large wholesale trade in the surrounding territory.

Several months ago fire originating in an adjoining building spread to the ice cream parlor and damaged the interior considerably. Re-building his place of business, Mr. Fleming installed new equipment, including a refrigerating system.

The soda fountain, 40 ft. in length, including the ends, has 15 upholstered seats. In the rear, 15 booths have a total capacity for sixty persons.

Two Copeland one horsepower model X-1200 refrigerating units are installed in the basement. Both units are mounted on a heavy concrete base which absorbs all vibration.

These two units operate Copeland cooling units installed in the counter equipment which includes a cabinet holding 60 gallons of dipping ice cream, and 60 gallons of packaged ice cream.

In addition there is a food refrigerator, a bottle refrigerator, and a salad pan all electrically cooled.

Different refrigerating temperatures are maintained." Mr. Fleming said. "We find six to ten degrees above zero best for dipping cream and zero temperature for package and brick ice cream. Temperature of the salad table is about 40 degrees. Bottle goods are carried at about 25. Drinking water is kept at 38 degrees and carbonated water at from 35 to 38 degrees.

"In the basement we operate an ice cream plant which produces 500 gallons a day for retail and wholesale trade."

TO HELP YOU MAKE MORE SALES

If you are a manufacturer, distributor, or dealer, you can use the *Refrigerated Food Section* as a definite aid in the promotion of commercial sales. Simply see that it reaches your commercial prospects.

In the *Refrigerated Food Section* will be found news and information of interest to meat merchants and grocers, chain store executives, ice cream manufacturers, druggists, confectioners, restaurant owners, and all food service establishments.

Your prospects will be better informed on the advantages of up-to-date refrigeration equipment by reading the *Refrigerated Food Section.*

Use the blank below to order extra copies for distribution by your salesmen. Or send to ELECTRIC REFRIGERATION NEWS the names of companies to which you would like to have sample copies sent.—Editor.

Order *for* Refrigerated Food Section

ELECTRIC REFRIGERATION NEWS
550 Maccabees Bldg., Detroit, Mich.

☐ Send.....copies of *Refrigerated Food Section* for..... consecutive issues ($10 per hundred—10c per copy.)

☐ Send *Refrigerated Food Section* for one year (26 issues—$1 per year.)

Enclosed find ☐ Check ☐ P. O. Order ☐ Cash.

Name _____

Address _____

Send sample copies *Refrigerated Food Section* (no charge) to names given below.

Name _____

Address _____

Name _____

Address _____

Name _____

Address _____

Name _____

Address _____

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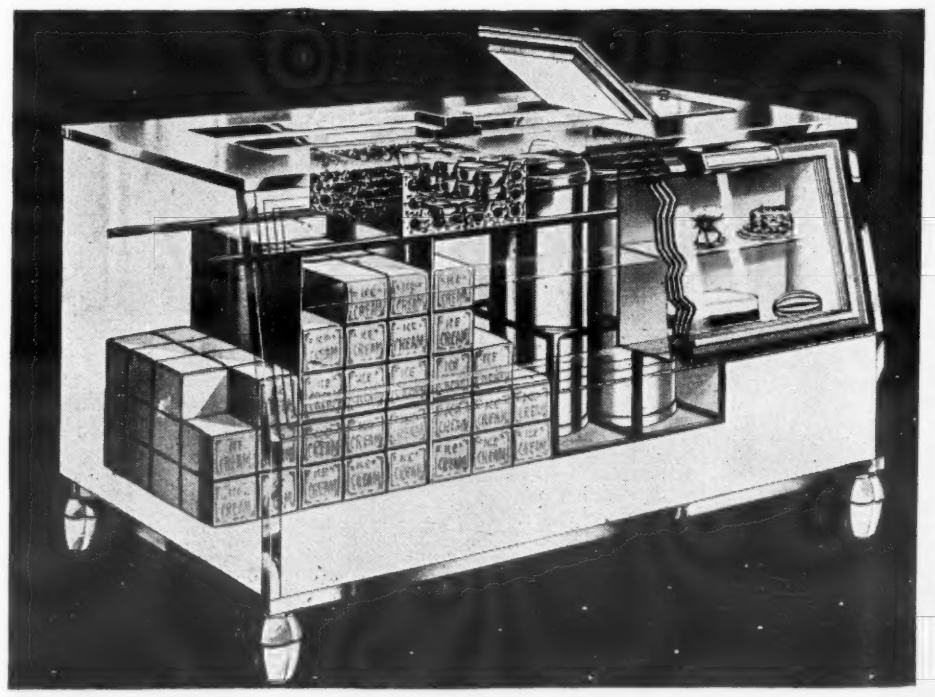
ZERO°MATIC

FROZEN FOOD DISPLAY CASES

Produced by the World's Largest Manufacturers of Store Equipment



Zero°Matic Junior 5-Foot Case . . . Interior View

Demand for Frosted Food Display and Storage Equipment Opens Up New Profit Opportunity for Refrigeration Dealers and Distributors

THE increasing use of frosted foods and meats is giving all types of food merchants an amazing opportunity to expand their business. Their first step is to buy the zero temperature equipment necessary to store and display these profitable new food packages. Alert refrigeration dealers can cash in on this new market by handling the finest equipment.

The Grand Rapids Store Equipment Corporation, world's largest manufacturers of store equipment, have created the New Way line of Zero°Matic Frozen Food Display Cases to meet all the requirements of this new method of distributing food. There are several sizes and types—all with ample storage and display space. The New Way Zero°Matic, a large zero temperature case for frosted foods and meats. The Zero°Matic Junior, a smaller zero temperature case (shown above) for ice cream and frosted foods. And the Chill-O°Matic, a normal temperature case for packaged fresh meats. All cases are built in our factories under the same high standards of material and workmanship as our famous lines of store equipment—and will give dependable, economical operation for years.

Zero°Matic Junior . . . Exterior View

Progressive refrigeration dealers and distributors can make money supplying retail stores with the Zero°Matic and Chill-O°Matic equipment they *must* have. Here's a new profit opportunity you can't afford to miss. Send the coupon below for literature and further information. There is no obligation.

THIS COUPON WILL BRING YOU FURTHER INFORMATION

GRAND RAPIDS STORE EQUIPMENT CORPORATION
1594 Madison Ave., S. E., Grand Rapids, Mich.

Gentlemen: We are interested in your New Way line of Zero°Matic and Chill-O°Matic display cases. Please send further information and literature. 94

Name.....

Address.....

City.....*State*.....

GRAND RAPIDS STORE EQUIPMENT CORPORATION
REFRIGERATION DIVISION
Main Office: Grand Rapids, Michigan
Factories: Grand Rapids; Portland, Ore.; Baltimore; New York City

In Three Parts

Engineering Section

Part Three

ELECTRIC REFRIGERATION NEWS

Registered U. S. Patent Office.

The business newspaper of the refrigeration industry

ISSUED EVERY TWO WEEKS
VOL. 5, No. 22, SERIAL No. 124

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DETROIT, MICHIGAN, JULY 1, 1931

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FIFTEEN CENTS PER COPY
TWO DOLLARS PER YEAR

G. E. CENTRALIZES CABINET MAKING IN ERIE FACTORY

Production Capacity To Be Doubled By New Plant

CLEVELAND, Ohio—(Special Wire to ELECTRIC REFRIGERATION NEWS)—The manufacture of the regular line of General Electric refrigerator cabinets will be consolidated in Erie, Pa., within a short time, it was announced a few days ago by A. M. Sweeney, product manager of the General Electric refrigeration department here.

The new $300,000 cabinet warehouse in Erie, to be used for this purpose, is nearing completion. The new warehouse is 400 by 350 ft., has a floor space of 140,000 sq. ft. and a storage space of 70,000 refrigerator cabinets.

It is equipped with modern cranes and conveyors, and is directly connected with the cabinet plant by a 600 ft. conveyor.

Cabinets will go directly from production line into either freight cars, for immediate shipment, or to the warehouse.

The new building is of mill construction, with brick and steel sash, and is fully protected against fire by fire walls and an adequate automatic sprinkler system.

At present, cabinets are being manufactured in Schenectady and Erie, and are shipped from both plants. When the consolidation is completed all cabinet manufacturing machinery in Schenectady will be moved to Erie and production will be doubled.

NEW DEALER SET-UP HELPS SERVICE WORK

By Charles B. Barr

NEW HAVEN, Conn.—(UTPS)—Seeking to solve the problem of providing service in territory served by a number of small dealers, the New Haven Electric Co., Copeland distributor for all of Connecticut and four counties of western Massachusetts, has evolved a new dealer set-up which in several months of trial appears to have succeeded in its purpose.

The change consisted chiefly in dropping the old "key dealer" system and substituting what is termed a "commercial-service" set-up.

The disadvantage with the old system was that small dealers, who are in the majority in New Haven Electric's territory, were unable to set up an adequate service department due to the expense involved, and the comparatively small sales volume. This distributing firm believes that a number of small dealers will sell more refrigerators, on the average, than a few large ones.

Obviously, a dealer who sells only from 12 to 20 refrigerators a season, cannot afford proper service facilities. Another disadvantageous feature of the small dealer system was that he couldn't handle commercial refrigeration with any degree of success, not having the technical knowledge or the facilities.

C. F. Ganter, refrigeration manager; Henry Blatchley and W. B. Sanderson of the distributing firm put the commercial-service dealer plan into effect in January, and it has been functioning satisfactorily ever since. As explained by Mr. Ganter and T. G. Tynan, general sales manager, the new plan settled in large measure what had been the major problem, that of providing

(Concluded on Page 9, Column 2)

MILTON BROWNE TO PUBLISH NEW DATA ON HUMIDITIES

KANSAS CITY, Mo.—New charts and data on humidity and humidity control in air conditioning will appear in Milton W. Browne's second edition of "Cold Storage Temperatures and Humidity Chart," which is to be issued this month in book form.

The book will be published in a 10 by 13 in. size, with between 150 and 200 pages. It will include practical and scientific information of interest to refrigeration engineers and cold storage men, according to the author.

Forging Connecting Rods

Workmen at the Detroit Forging plant create considerable din with their drop forge hammers.

APEX SCHOOL TEACHES SERVICE PRINCIPLES

FORT WAYNE, Ind.—Problems confronting the serviceman in the field are taken up regularly at schools conducted on the average of once a month by the Refrigeration division of the Apex Electrical Mfg. Co., according to Tom J. Smith, Jr., assistant general manager.

In order to arrange the schedule for each service school, which covers a period of one week, the company requires the prospective student to submit his application on a special blank, answering questions, such as name of employer, position held, etc.

Each student's application is forwarded to the district manager in the territory, who approves it and in turn passes it on to the division manager for additional approval. It is then sent to the home office for final okay and the student is advised when and how to report for training.

A minimum class consists of 20 men, states D. J. Weingardner, who is in charge of the school, while a maximum class generally contains 60 students.

The first session of the refrigeration school gets under way on Monday morning at 10 a. m., lasting until 5:15 p. m., with a brief interim for lunch.

On the opening day, the student is given a picture of refrigeration in general, as the instructors take up subjects, such as, principles of electric refrigeration, different types of systems, Apex

(Concluded on Page 9, Column 1)

WESTON BUYS BUSINESS OF JEWELL INSTRUMENT

NEWARK, N. J.—The Weston Electrical Instrument Co., of this city, has acquired the business of the Jewell Electrical Instrument Co., of Chicago, and will thereby increase the range of its manufacture, afford additional distributing facilities, and lead to further expansion in research and development, according to Weston officials here.

Operation of the Chicago plant will be conducted by a newly organized subsidiary company, to be known as the Jewell Electrical Instrument Co., which will continue manufacture of its standard line at the Chicago location.

The Weston concern has issued 14,000 additional shares of its common stock in part payment of the new purchase.

PARSONS NAMED MANAGER OF CHEMICAL SOCIETY

WASHINGTON, D. C.—Dr. Charles L. Parsons, consulting chemist of Washington, D. C., has accepted a position as business manager of the American Chemical society.

Muffly with NEMA as Code Expert

NEW YORK CITY—Glenn Muffly, who has been connected with Copeland Products, Inc., Mt. Clemens, Mich., since 1925, as chief engineer and consulting engineer, has moved to this city to become a member of the N. E. M. A. staff to handle refrigeration safety code matters. He will retain his consulting relationship with Copeland, although the major part of his time will be devoted to his new work.

Mr. Muffly has been an active figure in the formation of safety codes, and was one of the voting members of the sectional committee which formulated the Safety Code for Refrigeration adopted by the American Standards Association last October. He is vice president of the American Society of Refrigerating Engineers, and a member of its Committee on Interpretations and Exceptions of the Refrigeration Safety Code.

Motor Service Hints

REMEDIES for difficulties that arise in the operation of refrigerator motors have been prepared by the Wagner Electric Corp., and are published in convenient tabular form on pages six and seven of this section, for reference by service men who are not accessible to the service shops of motor manufacturers.

While the information refers particularly to the Wagner fractional horsepower single phase motors, the pointers are applicable to all makes of brush-lifting, repulsion motors used in the refrigeration industry, P. J. Forsyth, Wagner branch manager in Cincinnati, explains.

REMINGTON SHOTGUN SHELLS TESTED BY REFRIGERATION

BRIDGEPORT, Conn.—Electric refrigeration has found a place for itself in the testing division of the Remington Arms Co. plant here.

A Frigidaire ice maker, connected to a one hp. water cooled compressor, is used for testing the efficiency of shotgun shells after they have been subjected to temperatures from 20° to 25° F. below zero. As many as 1,125 shells can be cooled at one time.

This installation was made by C. F. Mullins of the Downes Smith Co., Frigidaire dealer in Bridgeport.

WINDOWLESS HOUSE AFFORDS AIR STUDY

EAST PITTSBURGH, Pa.—Research engineers of the Westinghouse Electric & Mfg. Co. have designed and built a small windowless house here, in which temperature, humidity, and ventilation are combined to approximate what they term "perpetual Spring." The next step, engineers point out, is to make a Summer cooling plant out of similar equipment.

Numerous persons have worked and studied in the conditioned air of this model house, and pronounced it strongly conducive to greater health, comfort, and sustained effort. At the present time, the house is entirely experimental, having been designed only to aid in the study of different combinations of temperature, humidity, and ventilation.

The inside walls of the building are divided into panels, supported by pivots in such a manner that they can be turned much like shutters, a feature which helps in the control of air currents, according to L. W. Schad, research engineer, who worked out the details of design and construction.

An electric heating unit is attached to

(Concluded on Page 3, Column 1)

SERVICE CHARGES BASED ON TIME AND MATERIAL

DETROIT—R. W. Stearns, who operates the Apex Refrigerator Service Co. in this city, believes that a flat rate should be charged for all service calls that take less than 20 minutes to take care of, and when more than 20 minutes work is necessary to finish a job, time and material is the most equitable basis for charging the customer.

So when a service adjustment can be made in 20 minutes, the charge is $1.50, and when the job runs over that limit, the labor bill is figured at $1.50 an hour, with material charged at retail prices.

Installation of commercial refrigeration equipment has been one of the most profitable phases of his business, Mr. Stearns reports. These jobs are also figured on a time and material basis.

N. E. M. A. COMPILES FIGURES ON SMALL MOTORS

NEW YORK CITY—Figures released by the National Electrical Manufacturers Association show that orders were placed during the month of April for 214,899 fractional horsepower motors, aggregating a total of $2,088,681.33, while billings totalling $2,112,397.02 were issued.

In March, orders were placed for 157,939 units, with a total value of $1,883,269.97, while $1,812,734.87 worth of motors were billed.

FORGE HAMMERS POUND OUT 200 RODS PER HOUR

Detroit Forging Makes Compressor Rods Crank Shafts

By John T. Schaefer

DETROIT—Drop forged crank shafts and connecting rods for compressors used in the refrigeration industry are manufactured in about as much noise as the proverbial boiler factory, judging from the plant of the Detroit Forging Co. here, where many drop forgings are made for refrigerators and automobiles.

Chief activity in the plant takes place in a large, high room which houses 40 drop board hammers, so called because of the long board on each machine which raises the ram to its required height for each downward blow.

The hammers resemble large punch presses somewhat in their action. An operator feeds it with steel bars, heated to a temperature of about 2,200° F., depending upon the particular requirements of that forging. He starts the machine, a motor-driven gear moves the ram to a pre-determined height, it drops automatically, the force of the ram on the die forming the first impressions on the embryo crank shaft or connecting rod.

After three or four blows of the ram, the operator moves the hot rod from the first position on the die where the metal was being "bunched" for the thicker portions of the forging, to the second, third, and last formations in the die. Three or four drops at each one blocks the forging's impressions more accurately, until it receives its finished form at the fourth position.

Taking the rod from the fourth position, the operator holds it over a shearing edge, the ram falls, and a completely shaped forging drops to the pile behind the hammer. It cools there slowly before going to the heat treating department.

With the ram dropping at the rate of once a second, the usual rate, a good operator can make approximately 200 connecting rods an hour, according to E. R. Seibert, factory manager.

To render the forgings more easily machinable, and to relieve the internal strains which are apt to exist in them after their violent beating from the hammers, the forgings are normalized in heat-treating furnaces. Hardening is then accomplished by dipping them in either oil or water, depending upon the application for which the forgings are intended.

They are then cleaned in Pangborn sand-blasting machines, and in some instances are given tumbling and machine finishing treatment.

The rams in the heaviest hammers weight approximately 3,500 lbs, Mr. Seibert stated, and the base of each machine weighs about 20 times as much as the hammers themselves.

"Die-making is one of the most important phases of drop forging manufacture," he said, "since any defect in the die may result in imperfect forgings or a cracked die. They are tooled by die-makers in the tool department.

"Samples of all steel that comes into the factory are analyzed," he said, and pointed out that before the rods are stored, their ends are painted in color combinations to indicate their exact specifications.

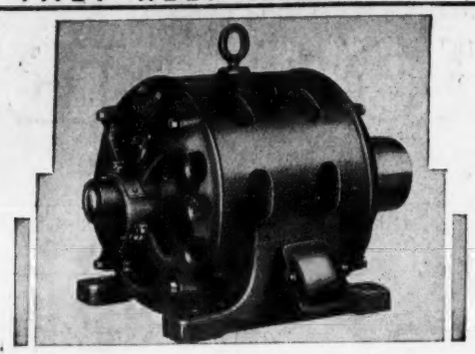
SPECIAL FRIGIDAIRE UNIT KEEPS TOBACCO LEAVES

CAMDEN, N. J.—Valuable Sumatra and Java wrapper, used on the 1,500,000 to 2,000,000 cigars made every day in the plants of the Congress Cigar Co., here, is protected against spoilage and deterioration by special Frigidaire equipment, installed in the wrapping rooms.

Costing $5 a pound, this wrapper leaf is expensive enough to warrant the best of care and electric refrigeration has been found to be the best method to insure against fermenting.

Temperature between 50° and 55° F. is maintained at all times in the big storage boxes. Because of the fact that this wrapper leaf must be kept moist, special humidifying arrangements have been made to supplement the natural defrosting action of Frigidaire fin coils.

THEY KEEP A-RUNNING



Five Horse Power Century Type RS Repulsion Start Induction Single Phase Motor

STARTING HEAVY LOADS

For starting compressors, electric refrigerators, oil burners, reciprocating pumps, stokers and other similar hard-to-start apparatus, the high starting torque of Century Single Phase Motors (brush-lifting type) is an especially desirable factor . . . Their low starting current is an added advantage, since it generally permits the use of full-load operating fuses for starting. Built in standard sizes from 1/8 to 40 horse power.

CENTURY ELECTRIC COMPANY
1806 PINE ST. - - ST. LOUIS, MO.
40 U. S. and Canadian Stock Points and More Than 75 Outside Thereof

Century MOTORS
FOR MORE THAN 27 YEARS AT ST. LOUIS

Ready For Service Calls

Harold L. Schaefer, Inc., Universal Cooler distributor in Minneapolis, is equipped to give quick service on local refrigeration equipment.

ARMCO LABORATORIES USING COLD TEST EQUIPMENT

MIDDLETOWN, Ohio—Special Frigidaire testing equipment has been installed in the bituminous laboratory of the American Rolling Mill Co., here, to indicate that the necessary constant low temperatures are being held.

The installation provides a temperature of 30° F. below zero for 24 hours a day, and under extreme conditions has provided a temperature as low as 50° F. below zero, according to Frigidaire engineers.

The equipment includes a ¾ hp. compressor, operating at a head pressure of nearly 80 lbs. The cold compartment is cooled by means of a brine tank filled with wood alcohol. Eight inches of insulation protects the interior of the test refrigerator from heat leakage.

African Game Hunters To Make Own Ice

DAYTON, Ohio—Natives of equatorial Africa are going to see their first ice cubes this summer, provided by a special Frigidaire ice maker designed for use by a party of Dayton big game hunters.

An insulated compartment, housing an expansion coil equipped with three freezing trays, is served by a Frigidaire compressor driven directly by a small gasoline engine. The whole installation is mounted in an angle iron frame and was designed to fit in the back of a motor truck.

William A. Chryst and Charles Kelso, members of the hunting party, who already have sailed for the East coast of Africa, expect to use this special Frigidaire on a five weeks' hunting trip through Kenya Colony and Tanganyika Territory.

CAR RADIO REVEALED BY GRIGSBY-GRUNOW

CHICAGO—As a result of development work started last November, many days of jolt and jar tests, and over 4,000 miles of road runs, a radio receiver for installation on automobiles has been announced by the Grigsby-Grunow Co. Motor Majestic, as it is called, has been so designed to be placed in any of the standard pleasure cars. The set, with tubes, is priced at $59.50.

"Motor Majestic is designed so that the receiver proper is mounted under the seat or the floor boards, well away from the motor where possible pick-up of motor interference is at a minimum," according to B. J. Grigsby, president.

"Tuning is done on a small control head clamped onto the steering column just below the wheel, from which a slender flexible shaft runs down the column and into the water and dirt-proof receiver case. The speaker is of the dynamic type," he said.

The tubes of Motor Majestic are lighted from the storage battery of the car, while "B" or plate current is obtained from four large dry "B" batteries in another case, also fastened out of sight beneath the floor boards. The speaker can be mounted in back of the dash, on the back of a front seat or elsewhere to suit the owner. The tube equipment consists of three type '36, two type '37 and two of the new type '38 pentodes.

McCORD OFFERS NEW ALL-METAL ICE TRAY

DETROIT—Triangular prisms of ice, rather than ice cubes, are formed in the new all-metal tray which the McCord Radiator Manufacturing Co. here recently announced. The new "Easy-Out" tray is made of metal, in sizes to fit any of the standard models of electric refrigerators. It has approximately the same capacity as other trays now on the market.

The trays are designed with two channels extending along their length, with a removable-saw-tooth grid reaching from end to end in each channel.

The trays are filled with water in the usual way, but removal of the ice is accomplished by lifting the ears at the ends of the grid, loosening half of the ice prisms. By inverting the tray, the rest of the prisms come out. Hot water is not necessary to remove the frozen prisms, McCord engineers claim.

The grid is fabricated of spring bronze, the tray proper being of non-corrosive tinned metal. The prism lengths vary from 1¼ in. to 2¼ in., depending upon the size of the cooling unit for which the tray is made.

The trays are being offered to the trade in cellophane wrapped packages, officials of the company announce.

NEW UNIT IMPROVES NEON SIGN'S POWER FACTORS

NEW YORK CITY—For raising the power factor of neon signs from as low as 40 per cent to better than the 85 per cent demand by some power companies, the Dubilier Condenser Corp. here, in collaboration with the Claude Neon Lights, Inc., has developed a line of special capacitors.

The Dubilier engineers recommend power factor correction of neon signs at 220 volts rather than 110 volts. Transformer manufacturers are advised to provide an additional 220-volt primary winding where power factor correction is to be carried out in the actual installation, thereby saving a substantial sum for the sign owner.

The Dubilier power factor correction capacitor is Type PL-2477 for the 220-volt application, measuring 5x1½x8 in. high. It is enclosed in a substantial steel case with mounting feet and pigtail leads, ready to be laced alongside the transformer supplying each section of the sign.

External mounting of the correction capacitor is preferable to incorporation in the transformer itself, they state, particularly in the matter of heat dissipation. For correction at 110 volts, Type PL-2547, measuring 5 3/16x2 13/16x9¾ in. high, is employed.

FRIGIDAIRES FOR MIAMI JOB

MIAMI, Fla.—A 26-unit apartment being built by William F. Whitman on Miami Beach, is having a refrigeration system installed by the Domestic Refrigeration Co. Inc. of Miami, distributor for Frigidaire.

LARKIN-WARREN INCREASES MANUFACTURING FACILITIES

ATLANTA, Ga.—Factory and office facilities of the Larkin-Warren Refrigeration Corp. here have recently been enlarged to meet the increased demands for cooling coils. Day and night shifts have been necessitated by the increased volume of sales, according to officials of the company.

A 95-ft. extension to the present coil manufacturing plant, to handle all of the tinning and fabrication of the tubing, now provides a segregation of the tinning operations with their attendant acid fumes.

The shipping department which became overburdened during May because of lack of floor space, has been increased three-fold in floor area, and is equipped to handle four times the former shipping volume.

A definite shipping schedule has been established which demands that shipment of all express orders received by 10 a. m., be made that same day. The freight schedule calls for shipment of orders of 10 coils or less, within 48 hours after receipt of the order. Unless otherwise specified, orders for 10 or more coils, are considered as stock orders, and are shipped within a week.

Larkin-Warren coils are used by Copeland, Servel, Absopure, Brunswick-Kroeschell, Ice-O-Matic, Kulair, Merchant & Evans, Trupar, Zerozone, Apex, Potter and others.

ELLIOTT PLACED IN CHARGE OF WESTINGHOUSE FOUNDRY

EAST PITTSBURGH, Pa.—F. F. Elliott has been appointed mill and foundry general superintendent of the Westinghouse Electric and Manufacturing Co., it is announced by J. M. Hipple, works manager.

H. F. Seifert has been appointed superintendent of the brass foundry and copper mill, and C. R. Stevens was named purchasing engineer of the purchasing department.

JOSEPH HARRY DIES AT WORK

DETROIT—Joseph Harry, vice president of the Harry Brothers Mfg. Co., local manufacturers of metal stampings for the refrigeration industry, died suddenly Tuesday, June 23, while at work at his desk. His brother, William G. Harry, president of the firm, heard him call "Bill" from his desk, and turned in time to hold him in his arms as he passed away.

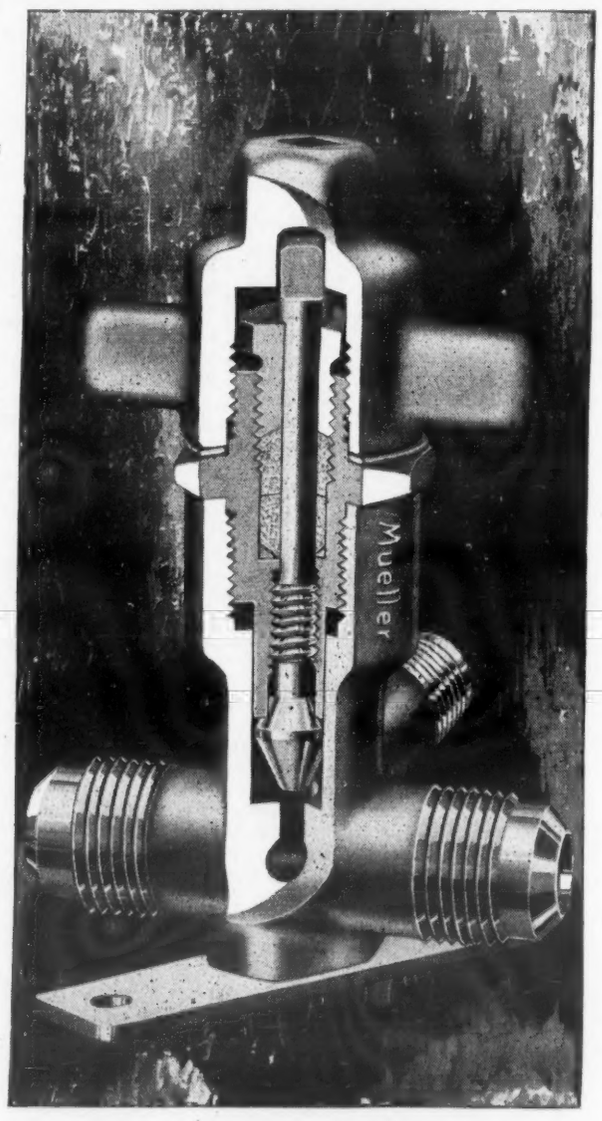
STREAMLINE Coupling
Copper to Copper
Patent 1,770,852
Patent 1,776,502
Other patents pending

STREAMLINE Coupling
Copper to Outside I. P. S.
Patent 1,770,852
Patent 1,776,502
Other patents pending

STREAMLINE Tee
Copper to Copper to Copper
Patent 1,770,852
Patent 1,776,502
Other patents pending

STREAMLINE Cross
Patent 1,770,852
Patent 1,776,502
Other patents pending

STREAMLINE Coupling
Copper to Inside I. P. S. Thread
Patent 1,770,852
Patent 1,776,502
Other patents pending



Mueller Double Packed Shut-Off Valve
With Seal Cap and Integral Operating Wrench Attached
Designed to comply with Underwriters' specifications and the most stringent codes

Cross

Elbow

Flared Tube Seal Cap

3-Way Tee
Iron Pipe Thread On Side

Don't let your business seep away
through leaky valves and fittings

Gas seepage is absolutely impossible when Mueller brass valves and fittings—forged under 150 tons of pressure—are used. Density is the Mueller answer to the gas seepage problem. Tees and elbows are forged; union couplings and nuts are machined from extruded brass rod.

Sand castings, no matter how heavily tinned they may be, cannot be depended upon to prevent leaks. Sooner or later they fail, with resulting trouble and expense.

Important, too, are production economies, made possible by the absolute uniformity of Mueller products. Their freedom from flaws, inaccuracies or roughness eliminate many machining operations, save tools and facilitate assembly. Mueller brass forgings run more pieces to the pound. You buy fewer pounds, because greater strength means lighter weight. You obtain 100 per cent. usability and save the 10 per cent. to 15 per cent. allowance usually made for scrap, when brass sand castings are used.

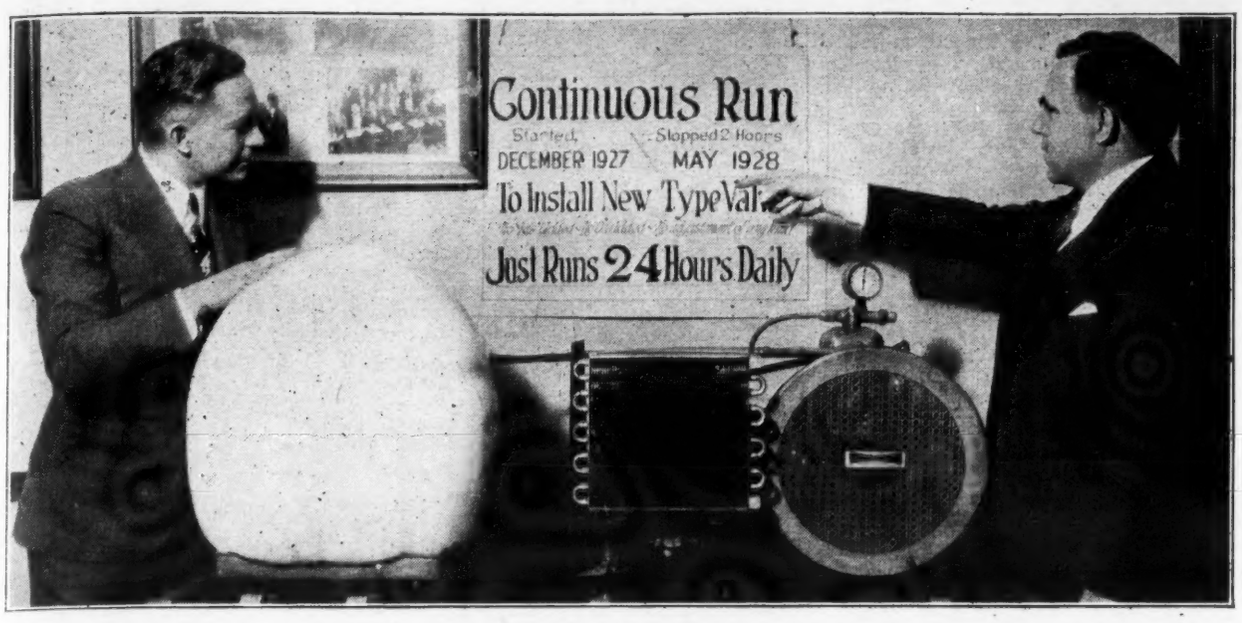
Mueller Brass Co. valves and fittings are approved by the Underwriters' Laboratories of Chicago

Mueller BRASS CO. OF PORT HURON MICHIGAN

THREE GENERATIONS OF BRASS MAKING

(103)

On the Proving Ground Three and a Half Years



This Ice-O-Matic has been running continuously since December, 1927, in the lobby of the Williams plant, Bloomington, Ill., except for a few hours in May, 1928, when new type valves were installed.

Westinghouse Conditions Air In Model House

(Concluded from Page 1, Column 4)

the back of each panel, and similar units are attached at regular intervals to the supper side of the ceiling, making heat distribution even at all points.

These elements are controlled by separate switches so that it is possible to warm any one panel, any series of panels, the low panels and the ceiling, the ceiling alone, or any other selected section of the wall surface in order to study the results of climates made to order.

With the walls at the temperature of the body there can be no heat loss by radiation, Mr. Schad said, and one is quite comfortable, although the thermometer shows the air temperature of the room to be only 60° F.

Some months ago, when Mr. Schad proceeded to work out the details of design and construction, it was known that at normal humidity and temperature, 44% of body heat is lost by radiation, 26% by moisture evaporation, and 30% by convection.

Because radiation is the big item, and since heat travels by radiation with the rapidity of light, it was believed that heating the walls and ceiling to body temperature would prevent this loss.

Schad defines radiation as the transfer of heat from hot to cold bodies by wave motion, independently of the surrounding air. Evaporation of moisture on the skin absorbs heat from the body, he explains, and this element of body heat loss should be taken care of by regulating the humidity or moisture of the air.

Convection, the transfer or loss of heat by means of either forced or free air currents, could be modified by controlling the temperature and circulation of the air in the little house, and by producing the comfortable combination of these three variables, the engineers hoped to create more desirable living conditions at a low operating cost.

Schad simplifies the technical understanding of radiation with two illustrations. He mentions the common experience of feeling heat from a pile of burning ties as one is riding along on a train, as it comes through a closed window, despite the speed of the train. Another familiar demonstration is that sensation of chilliness caused by loss of bodily heat as it radiates to the cold glass of a sun parlor in winter when the thermometer inside reads 74° F. In both cases the surrounding air was normal.

Ignoring these facts, he points out, we depend for winter comfort in our homes and offices upon heating the air which surrounds us. To some extent this air heats the surrounding walls, but he says there is always quite a temperature difference between the air and those walls which steal so much of our bodily heat.

So the plan to heat those walls, sufficiently to stop that surprisingly large 44% loss, has been experimentally worked out.

Inside walls of the little house are divided into panels supported by pivots in such a manner that they can be turned much like shutters, a feature which helps in the control of air currents. An electric heating unit is attached to the back of each panel, and similar units are attached at regular intervals to the upper side of the ceiling, making heat distribution even at all points.

OIL BURNER MANUFACTURERS TO MEET IN TORONTO

TORONTO, Can.—Members of the American Oil Burner Association will hold a general conference here on July 13 to discuss elimination of unethical trade practices which have been harmful to the industry.

On the following day, the directors of the association will hold their quarterly meeting in Toronto. Trade practices and association affairs will take up most of the discussion.

PORCELAIN CONSULTING SERVICE IS ESTABLISHED

CHICAGO—A Manufacturers' Technical Consultation Service has been established by the Porcelain Enamel Institute, here. The service, according to the announcement, is for the benefit of manufacturers who wish to determine whether porcelain enamel is a finish adaptable for use on their products.

In making the announcement, officials of the Institute say the demand for information from manufacturers designing new products has been so urgent that a consultation service of this type seems to fit in very well with other of the Porcelain Enamel Institute's research and product development activities.

"During the last few years manufacturers have come to realize more than ever the importance of design in the development of new products and in revamping the old established lines," R. A. Weaver, president of the Porcelain Enamel Institute, said when speaking of the newly established Technical Consultation Service.

"Since the organization of the Institute, we have had numerous requests from prominent manufacturers interested in using porcelain enamel as a finish for their products. Naturally, these people are not altogether familiar with the advantages of porcelain enamel, nor with its limitations. We plan to assist these men in the development of their products.

"With the addition of a consultation service, the Institute is now assimilating technical information concerning porcelain enamel in conjunction with its other activities of sales promotion, advertising and marketing suggestions, and surveys for these companies interested in receiving this type of material," Mr. Weaver explained.

In some instances, it is advisable for the manufacturer to have his enameling done by other companies specializing in this type of work. Other companies find it speeds up their production and delivery to install equipment enabling them to apply the porcelain enamel themselves.

Consider—

Artic

REG. U.S. PAT. OFF.

(Methyl Chloride)

. . . the ideal refrigerant for all practical purposes, both in household and commercial units.

STABLE
NON-CORROSIVE
EASILY HANDLED
LOW HEAD PRESSURE
COMPARATIVELY LIGHT WEIGHT
HIGH OPERATION EFFICIENCY

. . . The services of the R & H Technical Staff are available without charge to users of ARTIC and ARTIC MIXTURES.

Send for our Service Manual which gives information on properties and handling of Artic and Artic Mixtures and the servicing of Artic equipment.

The ROESSLER & HASSLACHER CHEMICAL COMPANY
Incorporated
10 East 40th St. New York, N. Y.

Aluminum cast around copper coil

AMERICAN
CASTINCOIL
DOMESTIC UNITS

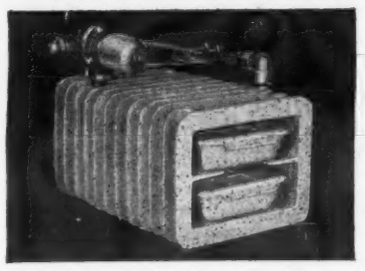
High-heat-transmitting, durable metals make American Castincoil Domestic Units quick freezing, as well as indestructible. Yet prices are comparable to those of inferior and cheaper units.

Designed for individual units with American Automatic Expansion Valves . . . for multiple systems with American Thermostatic Expansion Valves. They have a small amount of coil and require the minimum of refrigerant.

These improved units are furnished in two sizes: 2-tray, for boxes of 4 to 6 cubic feet; 3-tray, for those of 7 to 9 cubic feet. Trays are furnished with fronts, of either chrome or white porcelain, or without fronts.

Write today for catalog. Learn how inexpensively you can install these rapid-chilling, trouble-proof, permanent units.

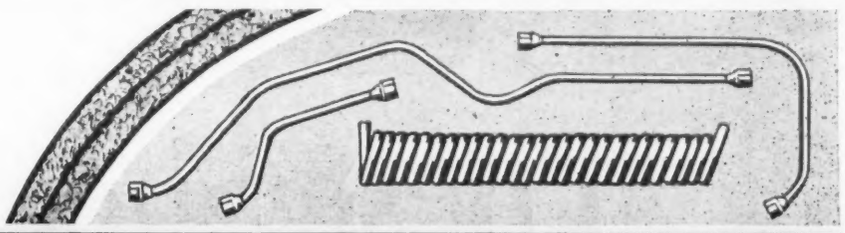
Individual Unit, 3 trays



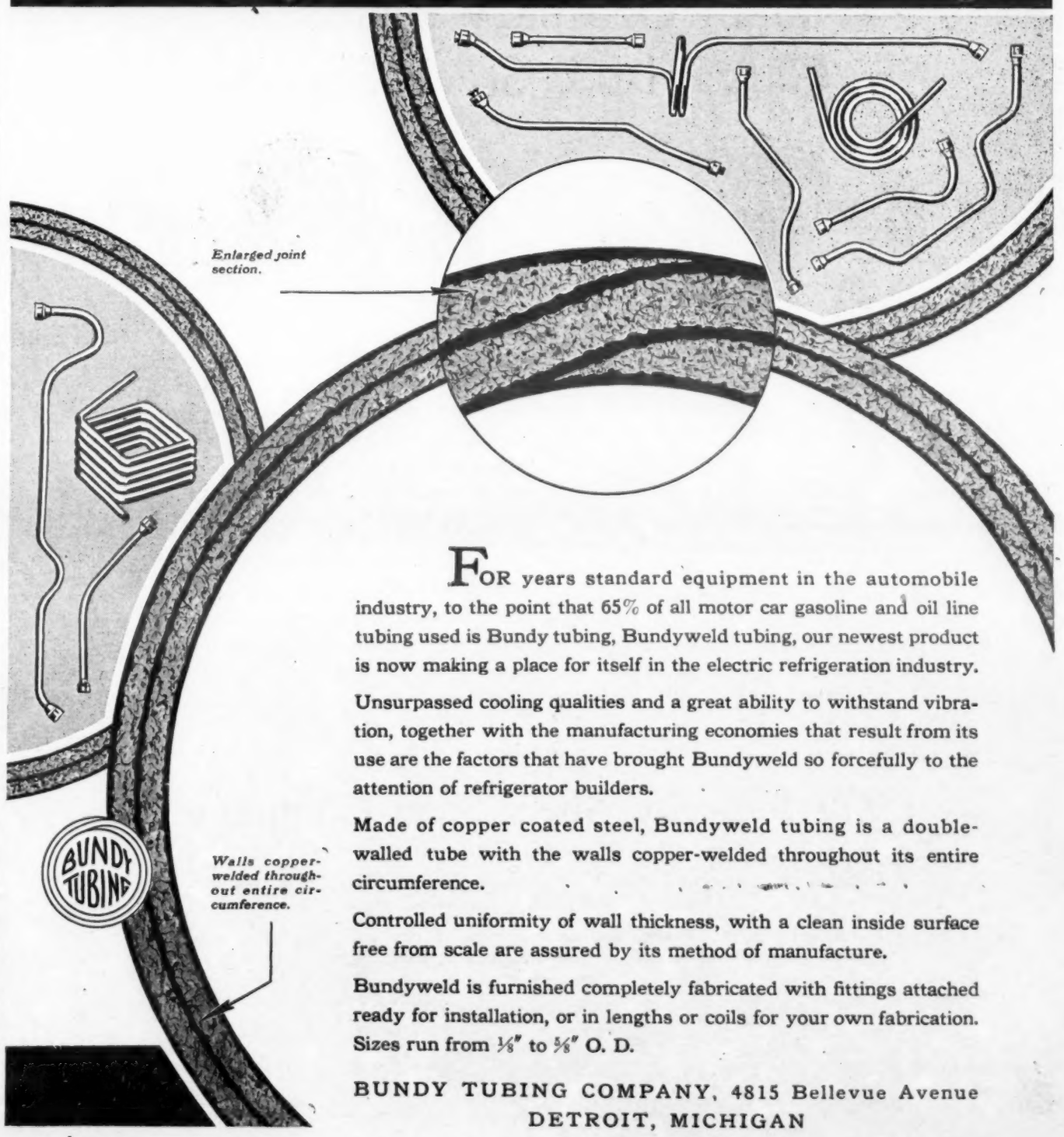
Multiple Unit, 2 trays

Manufacturers of
American Automatic and American Thermostatic Expansion Valve

DETROIT LUBRICATOR COMPANY
Division of
AMERICAN RADIATOR & STANDARD SANITARY CORPORATION
5842 Trumbull Avenue, Detroit



BUNDYWELD *Tubing*



FOR years standard equipment in the automobile industry, to the point that 65% of all motor car gasoline and oil line tubing used is Bundy tubing, Bundyweld tubing, our newest product is now making a place for itself in the electric refrigeration industry.

Unsurpassed cooling qualities and a great ability to withstand vibration, together with the manufacturing economies that result from its use are the factors that have brought Bundyweld so forcefully to the attention of refrigerator builders.

Made of copper coated steel, Bundyweld tubing is a double-walled tube with the walls copper-welded throughout its entire circumference.

Controlled uniformity of wall thickness, with a clean inside surface free from scale are assured by its method of manufacture.

Bundyweld is furnished completely fabricated with fittings attached ready for installation, or in lengths or coils for your own fabrication. Sizes run from ⅛" to ⅝" O. D.

BUNDY TUBING COMPANY, 4815 Bellevue Avenue
DETROIT, MICHIGAN

Thyratron Tube Can Be Used As Switch, Rectifier, Engineer Shows

By C. W. Stone,
Consulting Engineer, General Electric Co.

NEWSPAPERS, technical papers, magazines, etc., have devoted considerable space of late to the discussion of a new type of thermionic valve. Many engineers, in reading these discussions, have come to the conclusion that it is a new type of device for the improvement of radio.

Dr. Langmuir, Dr. Hull and other scientists in the research laboratory of the General Electric Co., have devoted a great deal of their time the last few years and have made many experiments studying the operation of different radio devices. The outcome of this work has been the development of this new type of valve which has been named the "Thyratron."

In this discussion, I will attempt to describe some of the general characteristics of this device and suggest some of its applications.

The Thyratron is a device consisting of an envelope of glass or metal from which the air has been exhausted, and some other gas, such as mercury vapor, has been substituted.

Within this envelope there are three electrodes, one called the cathode, one the anode, and one the grid; in some cases the envelope itself may act as the grid.

There have been developed to date two distinct types of Thyratrons, one which we will call the mercury pool type, and the other the hot cathode type.

The action of these two types is similar, and yet there is sufficient difference between the two to justify the existence of both.

The principal difference between the two types is that the mercury pool type seems to be better suited to handle large currents at relatively low voltages, while the hot cathode type is better for lower currents and higher voltages.

Unlike other types of vacuum tubes, the Thyratron is more like a switch, and thus can be used for certain purposes where the other types could not be.

In most other types of tubes, the amount of current which flows through the tube is controllable by the polarity, and the voltage impressed on the grid. This is not so with the Thyratron, for in this type of tube, no current will flow unless the grid is made positive, and if the grid is made more positive or reduced to zero, or even if the polarity is reversed, the amount of current flowing is unchanged.

If an alternating current is connected to the tube, current will flow for half the complete cycle, but it will not flow unless the connections are reversed for the other half cycle, and, as stated above, not unless the grid potential is made positive.

If, after the first half cycle of current flow, the grid is made negative, the next half wave, when the impressed alternating current reverses, will not start as the door is closed; hence, the tube is essentially a relay which either closes the circuit or opens it, but has no control over the amount of current flowing while it is flowing, except that the amount of current can be controlled by the period of time that the door is open.

If we consider alternating currents, you can see that if the door is open, that is, the grid of the Thyratron is positive when the alternating current starts from zero on its positive half wave, full current for that half wave will flow; but by delaying the time of opening the door, we can limit the amount of current which will flow during the half cycle and when the current reverses, no current flows and current in the next half cycle will not start until the door is opened.

Considering the Thyratron from this angle, it is clear that to all intents, it is not only a relay, but it is also a switch, and is a type of switch which is easily opened or closed in half a cycle or less.

Serves as Full-Wave Rectifier

By suitable connections, two such tubes can be used, one for the positive half wave of alternating currents, and the other for the negative half wave.

Again, by changing the connections, we can make the direction of flow of current change by first allowing the current to flow in one tube and then in a second one.

With alternating current applied to the Thyratrons in the first case, the current flow from them will be undirectional, or so-called direct current; and in the second case with direct current connected to the Thyratrons, alternating current will be the result.

The two fundamental features above described are, to my mind, the most important things about them and I will, therefore, state them again in another way:

1. The Thyratrons are one-way devices.

2. By their use, the amount of current flow is controllable.

Before discussing the use of such devices, it may be advisable to consider the fundamental difference between direct and alternating current systems.

With a direct current system, the amount of power flow from any generator is easily controlled by the voltage of the generator, and this is also true of circuits, and use is made of this feature in all our systems.

With alternating currents, the amount of power flow can be controlled only by means of the governors of prime movers, and change of voltage results only in a change in the amount of circulating current between them.

D. C. Systems More Stable

These characteristics are fundamental and, therefore, we can say that direct current systems are much more stable in operation, and the operators are in control of the systems, while with alternating currents, the system controls the operator to a certain extent.

The layman, if he knew these facts, would naturally say, "Why use alternating currents at all?" but engineers would know how to answer him, so I will not waste space by discussing it.

There is one other fundamental which I should like to point out, and that is, all such insulation as cable insulation when subjected to alternating currents has what is called dielectric loss, and corona is ever present, usually intensified by any small void in the insulation. With alternating currents, we have such effects as capacity and inductance to contend with.

With direct currents, dielectric loss disappears, voids have little, if any effects, corona does not appear except at much lighter potentials than with alternating currents.

As our power systems grow in size and more power stations are connected together, there is the danger of having too much resistance or reactance in the connections between them, but on the other hand, unless there is something to limit the flow of current, such as reactance or resistance, the power concentration is so great that destruction to apparatus is great, and what is still more important, the shock to the system may be so great as to cause a shutdown.

If all feeders from an alternating current generating station and all tie feeders were operated with direct current using Thyratrons, the very nature of these devices is such that the direction of power flow is determined by their connection to the system and, in addition, the amount of this power flow, and it is easily controlled by the operator.

Frequencies Controlled Accurately

As the feeders leaving such stations would be direct current, and as the Thyratrons connected to the other end of these feeders are used to invert direct current to alternating currents, the frequency of this alternating current can be made almost anything desired. Thus, power stations of like or unlike frequency can be connected together and can be operated with no fear of loss of synchronizing power and no trouble from hunting.

In many cities we have 60 cycle alternating current and also 25 cycles, but the only way such systems could be connected together was through motor generator sets, and these are expensive, and more or less uncontrollable.

Thyratrons, when used for such ties, are very efficient, as the voltage drop in them may be as high as 25 volts for the mercury pool type and as low as 14 volts for the hot cathode type. Since the voltage used for such ties may well be as high as 30,000 volts, the efficiency is higher than with any other known device.

Another application of Thyratrons would be as ties between the alernating current networks and the direct current networks.

No Chance of Reverse Currents

In this case, the Thyratrons would be connected as rectifiers, and by a simple automatic control with no moving parts, power would flow from the alternating current network into the direct current if it were needed there as long as the alternating current voltage was maintained high enough, but if it dropped, current flow would stop and in no case could it flow in the reverse direction.

In case of a drop in voltage on the direct current network, the current flow from the alternating current network could be limited to any amount desired.

As such installations would be static and non-synchronous, they would act in many ways like a storage battery always on the system, and carrying load as long as the alternating current voltage was maintained, and picking up their load without attention as soon as the alternating current voltage came back to normal.

While the efficiency of such low voltage Thyratrons would not be as high as that of large rotary converters in substations, the drop in the direct current feeders from such substations would be eliminated. Thus, the current at the point where such rectifiers are connected to the system would be obtained at less cost.

The discussion so far has been centered around the use of Thyratrons for direct current transmission to rotary

(Concluded on Page 5, Column 1)

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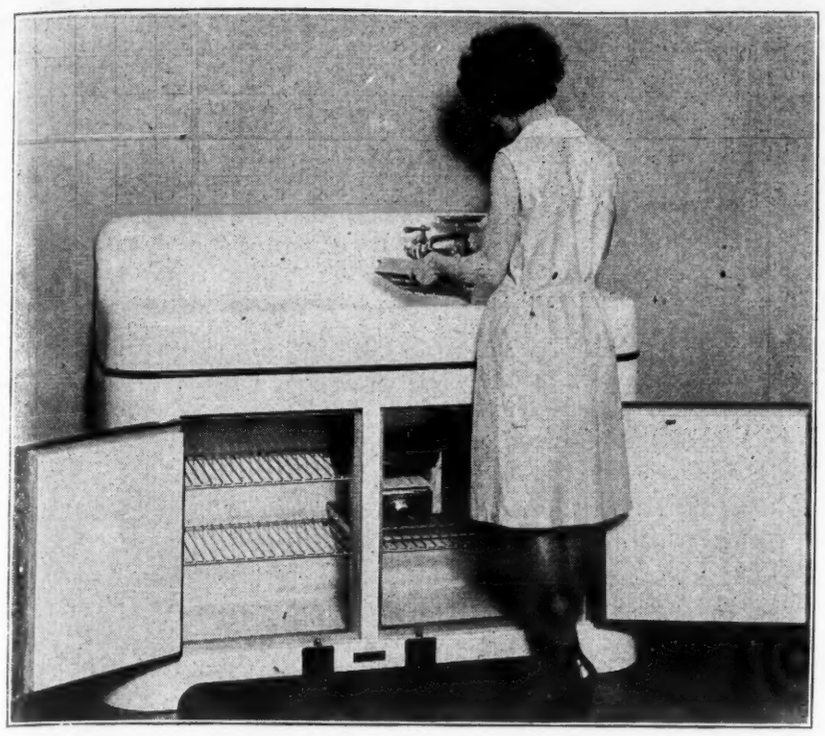


J. F. Weinheimer, a plumber of Buffalo, N. Y., has developed this sink model which he terms the "Combinator." It is designed to house most of the standard makes of electric refrigerator machines.

G. E. Engineer Shows Possibilities of Thyratron

(*Concluded from Page 4, Column 5*)

converters and their use as rectifiers for connecting alternating current and direct current networks together.

As most of our primary cables used in our cities are operated at voltages around 13,200 volts and as most of these cables have full insulation to ground and as they should be capable of standing at least double potential if direct current were used, we can consider another way of operating such feeders.

Where a feeder is run out to a substation, it is usual to run out more than one such feeder and this means six wires in the ground.

If we go back to the old Edison three-wire network system, we could connect each of the three wires of one cable to a Thyratron rectifier, the other side being connected to ground. Thus, all three wires in one cable on a 13,200-volt circuit would have 26,400 volts, and each of the three wires in the other cable would be operated in the same way, but at opposite polarity, and we would have three circuits instead of two, with the operating potential at 52,800 volts per circuit.

Permits Increased Line Capacity

Such an installation would mean a large increase in circuit capacity, probably more than was required to meet the load conditions, and would also mean the addition of transformers at both ends of the lines.

Another way to apply Thyratrons would be to connect the six conductors in the same way, that is, three conductors in one cable as positive and three conductors in the other as negative, but operate the circuit at the same potential as now. Thus, the insulation stress on the cables would be greatly reduced, and they should last almost indefinitely.

There is no theoretical reason why Thyratrons cannot be built for as high voltage as desired, and we have found that they can be operated in series or in multiple.

When the primary feeders of our electric power systems are all changed to direct current, there will be a still further gain, and that is, all generators will be operated at unity power factor and will, therefore, be more efficient and will cost much less to build.

Such a system can be compared to a water system where water is pumped into a reservoir and numerous pipes are connected to the reservoir. Then by opening valves, the amount of water flowing out can be controlled and nothing ever comes back.

The electrical system described is exactly the same except that in the electrical system, we would not store the energy, but the generators are used for unity power factor only and can all be operated at any frequency desired.

To sum up some of the advantages of direct current transmission and distribution, we can start back at the generating station.

All generators will normally be operated at practically unity power factor.

Generators can be designed for any frequency which will give the cheapest, most efficient and most reliable operation.

These two features alone should result in considerable less cost in our generators and the power house itself, as it can be made considerably smaller.

High voltage, large interrupting capacity oil switches will no longer be needed, as the Thyratrons operating as rectifiers can be used for all switch operations.

The concentration of large power in case of short circuits will be limited, as no power can flow into the trouble except that which flows through the rectifier. This power can be removed in a fraction of a cycle if desired, or by suitable combinations in the control circuits, the amount of power flowing into short circuits can be limited to even less than full load on the circuit.

Troubles incident to parallel operation of units and the synchronizing of units, of course, would disappear with such a system because the units are paralleled only through a direct current tie.

If the direct current transmission circuits are operated on the Edison three-wire principle with the neutral grounded, the bus bars, or as we have called it previously, the switch house, is very much simpler, as only two bars are used, one for the plus and one for the negative, and these can be put in separate parts of the house so that the two potentials will never come together.

The cables leading away from the power house can either be single conductor or multiple conductor, although it would seem best to make them single conductor cables in new power houses; that is, with positive conductor in one cable and the negative conductor in another cable. Thus, all joint troubles are very much simplified.

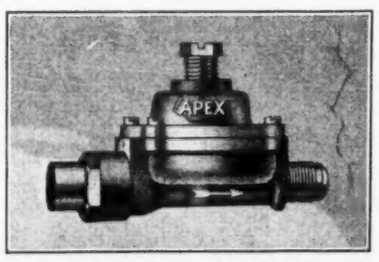
Reactance and capacity effects, of course, will disappear and, therefore, the only limit to the distance of transmission is the ohmic resistance of the conductors and the costs of such installations.

Cost May Be Justified

It would seem that the additional cost of Thyratron-rectifiers and inverters could be justified by the saving in the cost of the generating stations and the high tension oil switches. Certainly, the fact that the system is a controllable one should be worth considerable extra expense, both the Thyratron rectifiers and Thyratron-investers at high voltage are so efficient that we can neglect the losses in our calculations, and it would appear that the cost of these equipments, while seemingly high at the present time, will undoubtedly be much less as the manufacture of these Thyratrons is undertaken on a normal manufacturing basis.

In addition to all the above mentioned advantages, the costs of the transmission circuits themselves should not be over half of what they now are and, perhaps, even less.

It may appear from what I have said that I feel that the millennium is here but, of course, this is not the case. The manufacturer cannot work out all of the problems without the full cooperation of the operating engineers of our great systems.



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WILKES-BARRE HOSPITAL BUYS FRIGIDAIRE WATER COOLERS

WILKES-BARRE, Pa.—Electric refrigeration has been selected to provide cool drinking water at the new $2,000,000 Angeline Elizabeth Kirby Memorial Health Center.

In this building, which will be operated as a health center for children, has been installed a complete Frigidaire water cooling system. There are 36 fountains located at various places, served by six pressure type cooling tanks, and two 1½ hp. water cooled compressors. Circulating lines are of extra heavy brass pipe, insulated with 2 in. of cork.

The tanks are arranged so that any one can be cut off the system individually, or either three operated by one compressor can be cut off for any length of time desired.

CAPSTAN CAR PULLER MOVES FREIGHT CARS ELECTRICALLY

CHICAGO—Electrically operated, the new capstan car puller of the Webster and Weller Manufacturing Co. can be installed alongside any railroad siding to pull freight cars from one loading platform to another.

The car pullers are made in three sizes, designed to handle one, three, or six 80-ton cars on a straight and level track, or lesser weights on an incline. Cars are pulled by a manila rope, one end of which is coiled around the capstan, and the other end attached to the car.

They are built for both alternating and direct current.

U. G. I. MEN STUDY GAS REFRIGERATION

PHILADELPHIA, Pa.—Managers of the various U. G. I. properties recently attended an intensive one day review of gas refrigeration in the classroom of the Philadelphia Gas Works Co. at the invitation of Albert E. Lee, Electrolux sales engineer.

Speakers on the program included R. E. Ramsay of the U. G. I.; H. S. Christman, assistant sales manager, Philadelphia Gas Works Co.; C. R. Logan, chief supervisor of the refrigeration sales division; H. D. Lehman, manager appliance servicing division; and C. G. Simpson, assistant to Mr. Lehman. Mr. Lee also outlined the market for gas refrigeration and conducted general discussions, introducing George Etris, Electrolux engineer, who conducted a drill on controls.

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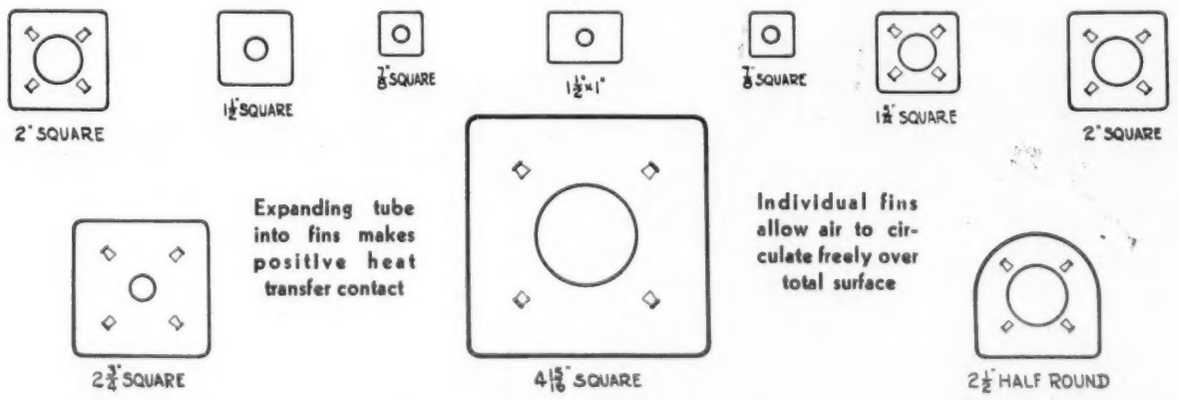

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A Service Man's Opportunity

THE wave of sweltering hot weather which swept across central portions of the country during the past week, and broke June high temperature records in many places, is probably keeping refrigeration service men hustling to answer the calls from owners of overtaxed refrigerators.

It is a difficult time for the service man, but withal, one which presents unusual opportunities for building good will, particularly in pointing out the advantages of electric refrigeration over all other forms of food protection.

Effects of Hot Weather

That hot weather is a trying time for human machines as well as mechanical machines is evidenced by the death record of hot weather sieges. Old men, women, babies, and even strong young men succumb to its ravages. It is no wonder that a device built expressly to combat heat becomes overloaded.

The chances are that a large proportion of calls for the distraught service man are from homes where the hot weather demands for food and drink are far in excess of the capacity of the refrigerators. In all too many cases the cabinet is too small to meet the normal requirements of the family, let alone the extra heavy service demanded in extreme hot weather.

Intelligent Handling of Calls

Many of these calls offer a unique opportunity to present a selling talk that may later result in the sale of a new refrigerator. Very likely the machine is much too small, and the customer should have a larger unit. Or the equipment may be old and obsolete, deserving replacement.

The service man can give effective aid to the selling forces by diplomatic and intelligent handling of service calls. In weather like this, people gain a high appreciation of their electric refrigerator, and it is a most opportune time to impress the customer with the fact that he has made a good investment.

The Motor Chart

IN THE adjoining columns is a chart, prepared by the Wagner Electric Corp., which will be helpful to refrigeration service men in making motor adjustments. Refrigeration motor troubles are analyzed, tests explained, and remedies recommended for the use of field service men.

The electric motor is one of the most reliable parts of the refrigerator, and normally causes little trouble. However, it stands between the power company and the mechanism which produces refrigeration. Consequently, any improper condition which arises, in either the current source or the refrigerating machine, may be reflected in the operation of the motor.

Fractional horsepower motors have been manufactured for many years, and their designs are fairly well settled. The main problem in their selection is the choice of the proper size and type. Probably more motor troubles can be traced to improper selection than to any other cause. Electric refrigeration probably presents more exacting requirements than any other motor application.

HANDY REFERENCE TABLE TO

Refrigeration Motor Troubles Diagnosed, Probable Causes, Tests, Remedies Presented in Convenient Tabular Form By Wagner Electric For Use of Field Service Engineers

PROBABLE CAUSE	TEST AND REMEDY

(A) Failure To Start

1. Fuses blown.	1. Check capacity of fuses. They should not be greater in ampere capacity than recommended by appliance manufacturer and in no case smaller than full load ampere rating of motor, and a voltage capacity equal to or greater than voltage of supply circuit.
2. No voltage or low voltage.	2. Measure volts at motor terminals with switch closed. See that it is within 10 per cent of voltage stamped on nameplate of motor.
3. Open circuited field or armature.	3. Indicated by excessive sparking in starting or refusal to start at certain positions of rotor or by humming sound when switch is closed. Examine for broken wires, loose connections or burned segments in commutator at point of loose or broken connection. Inspect commutator for foreign metallic substance which might cause short between commutator segments.
4. Improper current supply, incorrect voltage or frequency.	4. Requires new motor built for operation on local power supply. D. C. motors will not operate on A. C. circuit or vice versa.
5. Worn brushes or sticking brushes.	5. When brushes are not making proper contact with commutator, the motor will be weak in starting torque. This can be caused by—worn brushes, brushes sticking in holders, weak brush springs, or a dirty commutator. Commutator should be polished with fine sandpaper (never use emery). Commutator should never be oiled or greased.
6. Improper brush setting.	6. Unless a new armature has been installed, the brushholder or rocker arm indicator should be opposite index and locked in position. If new armature has been installed, the position may be slightly off original marking.
7. Improper line connection.	7. See that connections are exactly like connection diagram which is sent with motor. Motor may be connected for higher voltage and lower voltage applied.
8. Excessive load.	8. If the motor starts idle, and if all the above conditions are O. K. then failure to start is most likely due to excessive load. To determine this definitely make, or have a reliable electric shop make, a test of starting torque. Wagner fractional horse power repulsion induction motors have a starting torque of 350 per cent or more of full load torque. If the load requires more than this a larger motor is required. If this figure is 350 per cent of full load torque on a new motor (may be slightly less on a used motor) consult the nearest factory branch inasmuch as this would indicate either a misapplication of the motor, resulting in too great a load, or an increased load due to faulty driven apparatus. To determine the starting torque, obtain a smooth face flanged iron pulley, rope and weight and proceed as follows: (a) Tie one end of the rope on a projection from the test bench so that the rope will be at 90 degree to the shaft. Wrap the rope around the pulley, opposite to the pulley rotation, and hang the weight on the free end of the rope. Wrap sufficient turns around the pulley so that the tied end of the rope will be slack when the weight is lifted as the pulley rotates. (b) To prevent the rope from gripping the pulley, oil or paraffin the rope slightly. (c) Be sure that the hanging weight does not touch the floor or test bench. (d) Increase the weight until the motor will just start, then calculate as follows: For example, to test a ¼ hp., 1,725 r.p.m. motor, select a 4 in. pulley, ⅛ in. rope, and necessary weight. If assortment of graduated weights is not handy, use bucket and sand (or shot) adding weight so that pulley is slowly turning. $\text{Brake arm} = \frac{\text{Pulley dia. in inches} + \text{rope dia. in inches}}{12 \times 2} = \frac{4 + .125}{24}$ ft. $\text{Starting torque in lb. ft.} = \text{Brake arm} \times \text{wt. hung on rope} = \frac{4.125 \times w}{24}$ $\text{Full load torque in lb. ft} = \frac{\text{Full load hp.} \times 5{,}250}{\text{Full load r.p.m.}} = \frac{.25 \times 5{,}250}{1{,}725} = .76$ lb. ft. $\text{Starting torque in per cent of F. L. torque} = \frac{\text{Starting torque}}{\text{Full load torque}}$
9. Shorted stator.	9. See D-2 below.
10. Shorted rotor.	10. Remove brushes from commutator and impress full voltage on the stator. If there are one or more points at which the rotor "hangs" or fails to revolve easily when turned, the rotor is shorted. By forcing the rotor to the position where it is most difficult to hold, the short can be located as the shorted coil will become hot. Do not hold in position too long or coil will burn out.

(B) Motor Operates Without Releasing Brushes

(Brushes should leave commutator in 5 to 10 seconds. Troubles result from delayed operation)

1. Dirty commutator.	1. Clean with a piece of fine sandpaper. (Do not use emery.)
2. Gov. mechanism or brushes sticking, or brushes worn too short for good contact.	2. See that brushes move freely in slots and that governor mechanism operates freely by hand. Replace worn brushes with new.
3. Frequency of supply circuit incorrect.	3. Run motor idle. After brushes throw off, speed should be slightly in excess of full load speed shown on nameplate. An idle speed varying more than 10 per cent different from nameplate speed, indicates that motor is being used on a supply frequency for which it is not designed, and a different motor will be required.
4. Low voltage.	4. See that voltage is within 10 per cent of nameplate voltage with the switch closed.
5. Line connection improperly or poorly made.	5. See that contacts are good and that connections correspond with diagram sent with motor.
6. Incorrect brush setting.	6. Check to see that rocker arm setting corresponds with index mark.
7. Incorrect adjustment or gov. spring.	7. The governor should operate and throw off brushes at approximately 75 per cent of speed stamped on nameplate. Below 65 per cent or over 85 per cent indicates incorrect spring tension.
8. Excessive load.	8. An excessive load may be started and not be carried to and held at full load speed which is beyond where the brushes throw off. Tight motor bearings may contribute to overload. This is sometimes indicated by brushes coming off and on commutator. See also A-8.
9. Shorted stator.	9. See D-2.

REMEDIES FOR MOTOR TROUBLES

PROBABLE CAUSE	TEST AND REMEDY
(C) Excessive Bearing Wear	
1. Belt tension too great, unbalanced or out of line, coupling eccentric or too closely meshed gears.	1. Correct the mechanical condition.
2. Improper, unclean or insufficient oil.	2. The lubrication system of Wagner small motors, for instance, provides for supplying the right amount of filtered oil to bearing. It is only necessary for the user to keep oil wick saturated with a good grade of machine oil.
3. Dirty bearings.	3. When bearings get clogged with dirt motor may need protection from excessive dust. Application may be such that a specially-constructed motor should be used.
(D) Motor Runs Hot	
(Don't judge motor temperature by feel of hand. Measure it with a thermometer and check with temperature rise stamped on nameplate)	
1. Bearing trouble.	1. See condition under C.
2. Short circuited coils in stator.	2. Best check is by a separate wattmeter reading on each of the two halves of stator winding. Sometimes shorted coil may be located by fact that one coil feels much hotter than other. Very great increase over normal in magnetic noise may also indicate shorted stator.
3. Rotor rubbing stator.	3. Some extraneous matter may be between rotor and stator, or bearings may be badly worn.
4. Excessive loads.	4. Be sure proper pulleys are on motor and machine. Driving the load at higher speed requires more horsepower. Take an ammeter reading. If current draw exceeds nameplate amperes for full load, the answer is evident.
5. Low voltage.	5. Measure voltage at motor terminals with switch closed. Should not vary more than 10 per cent from value stamped on nameplate.
6. High voltage.	6. See No. 5, directly above.
7. Incorrect line connection to motor leads.	7. Check with connection diagram sent with motor.
(E) Motor Burns Out	
1. Frozen bearing.	1. Causes may be same as under (C).
2. Some condition of prolonged excessive overload.	2. It is important that the load be examined carefully before the burned out motor is replaced so as to locate and remove the cause of the overload. Certain jobs such as refrigerators which represent heavy load, will under unusual conditions of operation, apply prolonged overloads which may destroy a motor and which may be difficult to locate unless examined carefully. On jobs where it is assumed somewhat intermittent service will normally prevail and which consequently are closely motored, the load cycle should be especially checked as a change in this feature will easily produce excessive overload for the motor. Examine carefully to determine mechanical condition of the driven appliance.
(F) Motor Is Noisy	
1. Unbalanced rotor.	1. When handling in transportation has been so rough as to damage the shipping case, it is well to test motor for unbalanced conditions at once. It is even possible (though it rarely happens) that a shaft may be sprung. In any case the rotor should be rebalanced dynamically.
2. Worn bearings.	2. If unduly frequent, examine for cause. See (C).
3. Rough commutator or brushes not "seating" well.	3. This noise occurs only during starting period, but conditions should be corrected to avoid consequent trouble.
4. Excessive end-play.	4. Proper end-play is as follows: ⅓ hp. and smaller—0.005 to 0.030 in. 1 to ½ hp.—0.010 to 0.075 in. Washers supplied by factory should be used. Be sure to tell factory all figures involved. Remember too little end-play is at least as bad as too much.
5. Motor not properly aligned with driven machine.	5. Correct mechanical condition.
6. Motor not firmly fastened to mounting base.	6. All Wagner small motors, for instance, have steel bases so they can be firmly bolted to mounting without fear of breaking. It is, of course, not to be expected that the base should be strained out of shape in order to make up for roughness of a mounting base.
7. Loose accessories on motor.	7. Such parts as oil covers, guards, if any, on end-plate, etc., should especially be checked for security if they have been removed for investigation of any sort. The condulet box should be tightened when top is fitted after connections are made.
8. Air gap not uniform.	8. This results from sprung shaft or unbalanced rotor. (See No. 1 above.)
9. Amplified motor noises.	9. When this condition is suspected, set motor on a firm floor, and if motor is quiet, then the mounting is acting as an amplifier to bring out certain noises in the motor. This may occur even though mounting is quite firm in structure. Frequently correction of slight details in the mounting eliminates this, but rubber mounted type motors almost invariably do.
(G) Excessive Brush Wear	
1. Dirty commutator.	1. Clean with a piece of fine sandpaper. (Never use emery.)
2. Poor contact with commutator.	2. See that brushes are long enough to reach commutator, that they move freely in slots, and that brush spring tension gives firm but not excessive pressure.
3. Excessive load.	3. If brush wear is due to overload, it can usually be checked by noting the time required for lifting the brushes from the commutator. Proper time is not in excess of 10 seconds.
4. Failure to throw off promptly and stay off during the running period.	4. Examine for conditions listed under (B).
5. High mica.	5. Examination will show this condition and the remedy is to take a very light cut off the commutator face, and polish with fine sandpaper.
6. Rough commutator.	6. See 5.
(H) Brushholder or Rocker Arm Wear	
1. Failure to throw off promptly and stay off during running period.	1. No noticeable wear of this part should occur during life of motor. Troublesome wear indicates faulty operation. See (B).

On Our Bookshelves

"HANDBOOK OF OIL BURNING"

Author: Harry F. Tapp. Publisher: American Oil Burner Association, 342 Madison Ave., New York City. Pages: 629. Price: $3. Publication Date: 1931.

AUTHORITATIVE facts pertaining to the heating applications of oil are presented in convenient form in this well-indexed manual of the American Oil Burner Association. It was written as a guide in the solution of the problems that are met in everyday commercial oil heating practice.

The scope of the book embraces both domestic and industrial heating, wherever oil is used as fuel. The characteristics of oil as a fuel are first discussed, with emphasis on its advantages in domestic work, and the following larger applications: factories, naval service, and in railway use.

The outstanding experience of past history of oil production is that the potential supply has always been grossly underestimated, the auther claims. He estimates that probably not more than 25 per cent of the oil that is in the ground has been recovered, and points out that producing companies are employing more efficient methods than heretofore, and wasting less.

In addition, he says, there is what he terms an "almost unlimited" supply in the extraction from oil shale, while the development of coal distillation processes will produce large quantities of oils suitable for fuel. His oil production chart from 1860 to 1930 is a broken curve, but shows a rapid increase in the last few years.

Comparative fuel costs are presented, together with comparative costs of operating labor, maintenance, depreciation, and the operating costs of the power and auxiliary equipment.

Applications of the law of chemistry in oil heating, ignition temperatures, and the chemistry of combustion are briefly treated. A chapter on the fundamentals of heat and heat transfer gives principles and examples not unlike the problems worked out by refrigeration engineers.

About two dozen tables on the coefficients of heat transmission through the various building materials are published to enable the contractor to estimate the heating requirements of a job by applying the formulas given. Since the local climatic conditions are important in determining heat losses, temperatures and wind velocities averaged in various places by the U. S. Weather Bureau are also shown.

The use of oil heat in steam, hot water, and warm air heating systems is described, while diagrammatic drawings of typical installations show the approved locations of the various pieces of equipment. Chimney and draft requirements of various systems must be calculated, and the correct size and locations of the chimneys can be determined by the author's formulas and data.

Oil burners can be used for most industrial processes which require heat, he claims, although complete satisfaction demands that the proper type of burner be selected, the right grade of fuel used, and the equipment be skillfully installed and operated. A table of nearly 100 industrial applications in which oil heat is used, shows that the firing of pyrometer tubes demands the highest heat of 3,300° F., while the reduction of iron ore requires the great range of temperature, 500° to 1,500° F.

With the numerous designs of oil burners that enterprising engineering minds have developed within the last few years, the problem of classifying them is somewhat difficult. The most workable plan seems to be to class them according to the manner in which the air for combustion is supplied to the burner, and the process used to prepare the oil for combustion. Thus, the author divides them into the following four types: natural draft vaporizing burner, natural draft atomizing burner, mechanical draft vaporizing burner, and mechanical draft atomizing burner. The principles applied in these are all explained.

In a chapter on controls and motors, the author uses the term "full automatic" to describe a control system incorporating a device responsive to changes in temperature or pressure, a sequence control device, and a device to provide for ignition of the oil. If all operations except ignition are performed automatically, the control is semi-automatic.

A history of codes and ordinances applying to oil burner installations precedes a complete printing of the model ordinance prepared by the American Oil Burner Association, and recommended by the Oil Heating Institute.

A preliminary survey of the conditions influencing every oil burner installation to be made is urged by the writer, and he gives an outline of how a survey should be made.

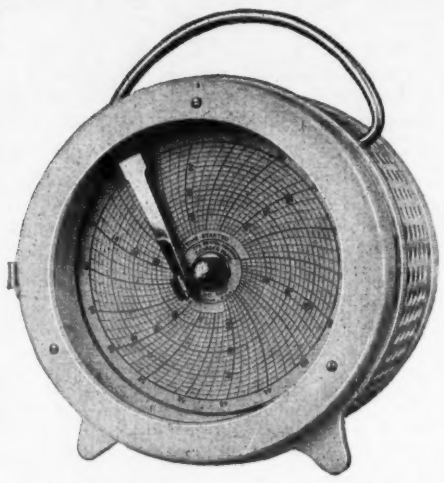
GLEANINGS
FROM RECENT PERIODICALS

IT HAS come to pass that a railroad coach has been made more comfortable than homes and expensively equipped private offices. The Baltimore & Ohio Railroad has installed air-conditioning apparatus on passenger cars that maintains purified air at constant temperature and constant humidity. There is no central air-conditioning plant on the train, but a standardized unit, consisting of heater, refrigerator and air washer, driven by a gasoline engine, is provided on each car.

If it is considered good business to operate these units on railroad cars by the use of gasoline engines, it should be better business to use standard units with motor drives in private homes, offices or public places. There are thousands of homes and private offices where money to purchase comfort and convenience is available. There are stores, theaters and restaurants where thousands of dollars are spent annually to attract and please customers. These would certainly not object to spending a comparatively small amount to provide a comfortable temperature and clean air for themselves and their clients. Enterprising utility executives, in cooperation with manufacturers, might well take the initiative and install air-conditioning equipment in their own private offices and homes and also develop the available markets. Load builders of the electrical industry should not allow railroad men to make them trail new business paths for very long.—*Electrical World*, June 20, 1931.

A Convincing Talker . . .

on Cooling Chamber Temperatures



TO handle customer complaints is a matter which sometimes requires considerable diplomacy. When it is a question of temperature in the cooling chamber there is nothing more satisfactory to all parties concerned than a continuous automatic temperature record furnished by Bristol's Recording Thermometers.

Especially developed for this work is the Bristol's Handy Recording Thermometer . . . easily portable so that it can be placed in the unit to give an unbiased decision of "How Cold is that Cooling Chamber?" The 4-inch diameter chart makes one complete revolution in 72 hours or exactly 3 days, which is sufficient time to give a fair criterion of existing conditions, entirely uninfluenced by outside sources.

This Handy Recording Thermometer has all the construction features necessary for cooling chamber installation, including specially developed range with chart temperatures from 30 to 70° F. or—20 to 80° F. Instruments thus calibrated are carried in stock for prompt delivery. Ask for Bulletin No. 377 giving details and price.

THE BRISTOL COMPANY
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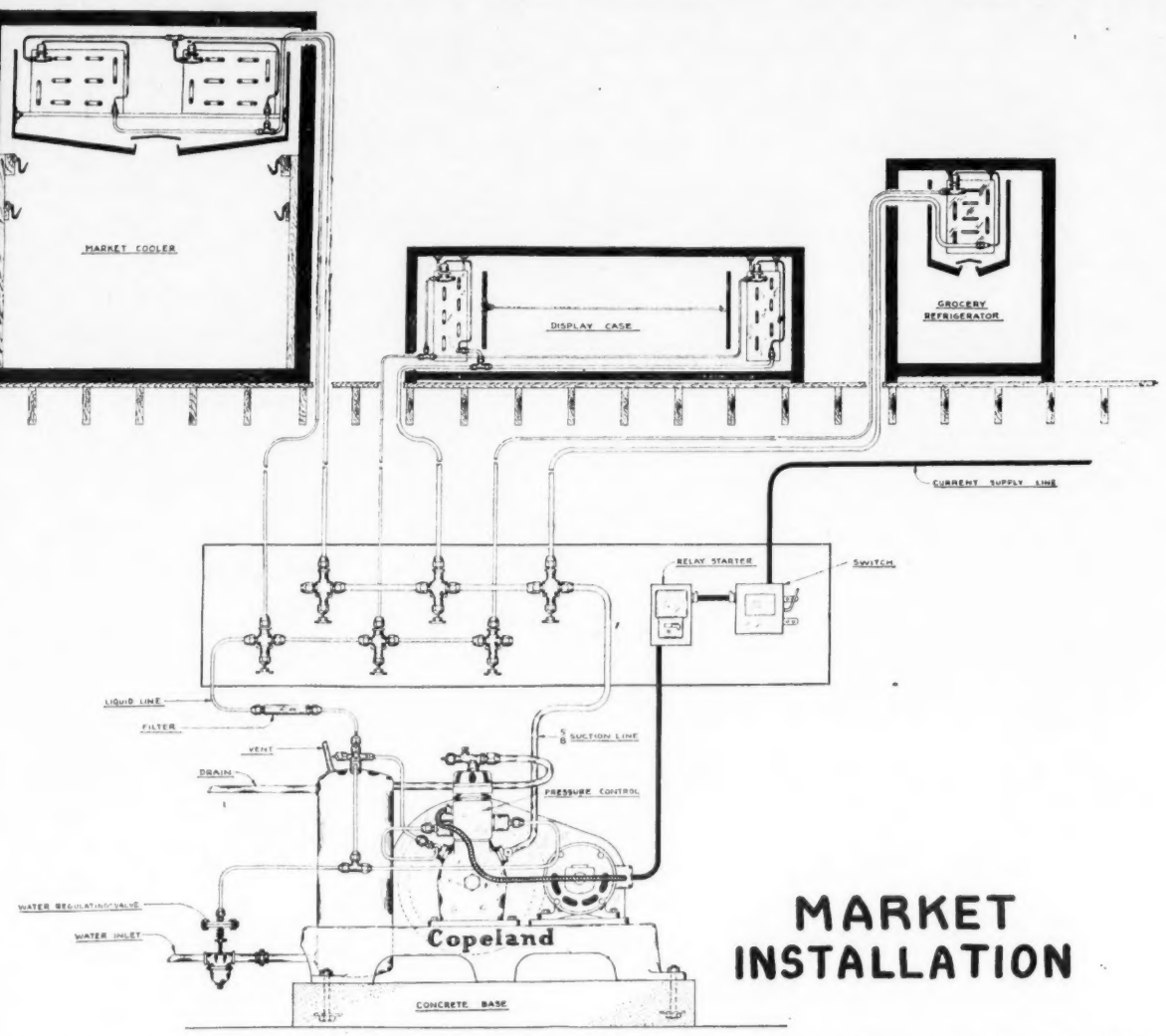
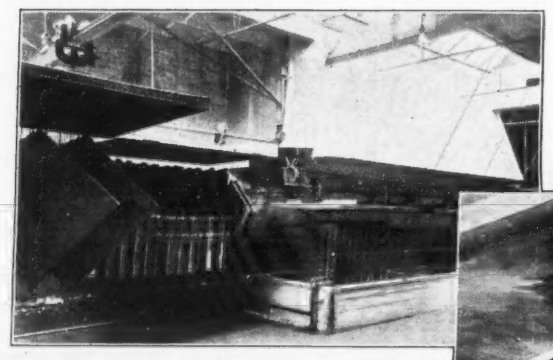
Here's An Approved Hook-Up For Market Equipment



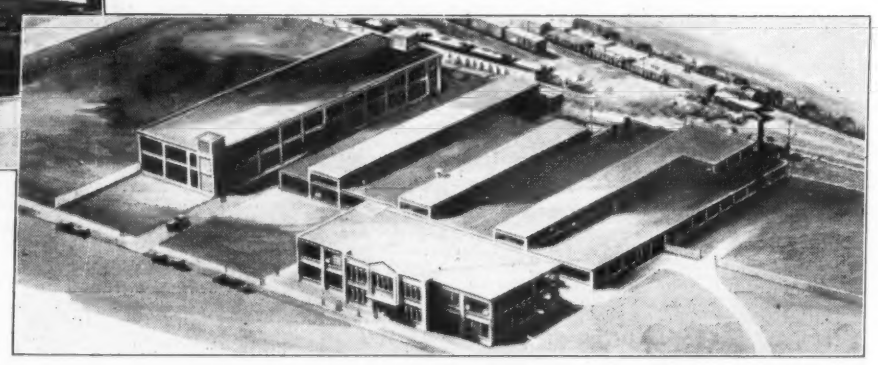
MARKET INSTALLATION

Copeland diagram of the way market equipment should be installed, showing the location of coils in the refrigerators, and the shut-off valves by which any coil can be taken off the system.

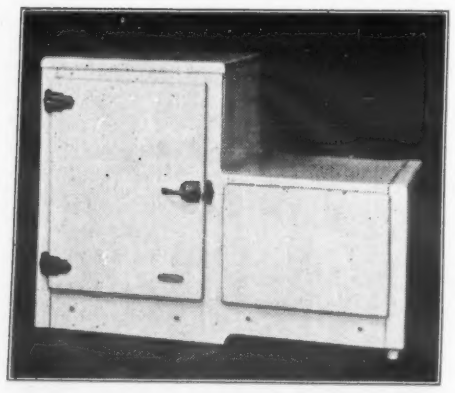
NORGE Cabinets are PROTECTED by BONDERITE



The Bonderizing Tank at the Muskegon, Michigan, plant, where Norge cabinets are made. Here metal parts are treated by the Bonderite process before enamel is applied.



Borg-Warner's Central Avenue plant in Detroit, where Norge refrigerators are made.



ABOVE. The Norge Sink Type Model takes advantage of the ordinarily unused space underneath kitchen sinks and drain boards. BELOW. The Norge Guardian Model.

A NEW refrigerator was introduced six years ago and called "Norge," after the land of the Vikings—suggestive of coldness, ruggedness and dependability.

Norge's simple construction features mark it a durable refrigerator, capable of giving its owner years and years of satisfaction.

Its mechanical heart, the ingenious "Rollator," with but three moving parts, is almost everlasting.

And the cabinet finish is permanent, for it consists of a fine quality enamel applied over BONDERIZED metal.

Norge cabinets are constructed and processed along an overhead conveyor line. After sheet metal stampings have been cut and welded into final cabinet form, they are given a ten-minute dip in a Bonderite solution. Then, after a quick water rinse, they are ready for the enamel application.

Bonderizing effects a conversion of the metal surface. Though smooth to the touch, under the microscope this is shown to be rough and porous. It absorbs and tenaciously holds paint, enamel, or lacquer applications, preventing any tendency to crack, flake, or peel. Thus is formed a constant barrier to corrosive elements which might soon ruin the appearance and usefulness of an unprotected cabinet.

Norge, like many other leaders of refrigeration, automotive, electrical, and other industries adopted Bonderizing because it was demonstrated to be an economical metal-finishing method, and because its results constitute a positive sales asset for the finished product.

Bonderizing equipment is simply and economically installed and operated, without necessity of skilled labor.

The process is well adapted to either small or large-scale production methods. Write today for interesting booklet "Bonderite."

Bonderite (HOLDS PAINT TO STEEL)

PARKER RUST-PROOF COMPANY
2197 Milwaukee Ave. - - Detroit, Michigan

SERVICE HINTS

By FRANK W. GRAY

Refrigerant Supply in Long Coils

WHEN long flooded-type coils are made up for installation in a horizontal position, such as in window display, salad counter, or display counter work, a liquid receiver at the opposite end of the coil from the "boiler" is advisable in order to insure an ample supply of liquid refrigerant throughout the length of the coil, and particularly at the further extremity of the coil. Where the heat leakage is high—as is often the case with window or open display installation—it is very important that there be plenty of liquid refrigerant in the coil when the machine is shut down if consistent frosting is to be accomplished.

Avoiding Oil in Long Coils

It is often found that long horizontal coils of the flooded type develop an oil condition after having been in use for some time. The tendency to accumulate oil may be avoided by putting a boiler at each end of the coil, the liquid line connection on one boiler being sealed off, while the suction line connection on the other boiler is sealed off.

The result is that each boiler acts as a liquid receiver, insuring ample refrigerant throughout the length of the coil, while the liquid supply entering one end of the coil, and the expanded gas being drawn off through the suction tube at the other, effectively prevents any oil accumulation in the coil.

Controls in Multiple Systems

An old-time expedient of service men to correct a condition in a multiple system where a flooded-type coil is producing too cold a temperature is to choke down the suction line tube leading from the coil by clamping it together with a pair of pliers. This raises the pressure in the boiler, and also the temperature.

This method of correcting a low temperature condition has bad results in that it almost invariably causes oil accumulation in the coil. Hand-operated sylphon type valves used to cut down the flow of gas through the suction line in order to raise or lower the temperature of a freezing coil have the same effect.

The snap-action temperature regulating valves do not cause oil logging because they are either entirely open or entirely closed, thereby never causing a merely stagnant action of the coil. Pinching down of suction lines, and use of hand-operated suction line valves to control temperature, should be relegated to the scrap heap of obsolete service methods.

Seasonal Temperature Adjustment

One of the great difficulties experienced in coordinating commercial multiple systems today is that insulation factors remain the same, while outside temperature conditions may vary so widely as to make necessary temperature adjustments of such multiple systems in hot and cold weather.

To illustrate, I cite the example of a display counter and a large meat cooler, hooked in multiple to the same compressor, with snap-action valves controlling the coil temperatures required in each unit of the installation.

If the room temperature falls to 50° F., as often happens in a butcher shop in winter weather, very little refrigeration will be needed in the display counter, where the heat leakage is normally much higher than in the large cooler where the insulation is heavier.

In the summer, when the room temperature may rise to 90° F., the situation reverses itself—the display counter needs the majority of the refrigeration, while the box, having a lower heat leakage through its heavily insulated walls, demands less.

In order to compensate for this difference, a re-setting of the temperature control valves is usually necessary. Where insulation values are widely different, separate compressors naturally produce the best results. Perhaps some day a snap-action temperature control valve will be invented which is thermostatic, being controlled by the air temperature in the refrigerated unit rather than by coil pressure. Such a valve would accommodate itself to outside temperature conditions irrespective of the degree of heat loss through the variously insulated walls.

Up and Down Risers

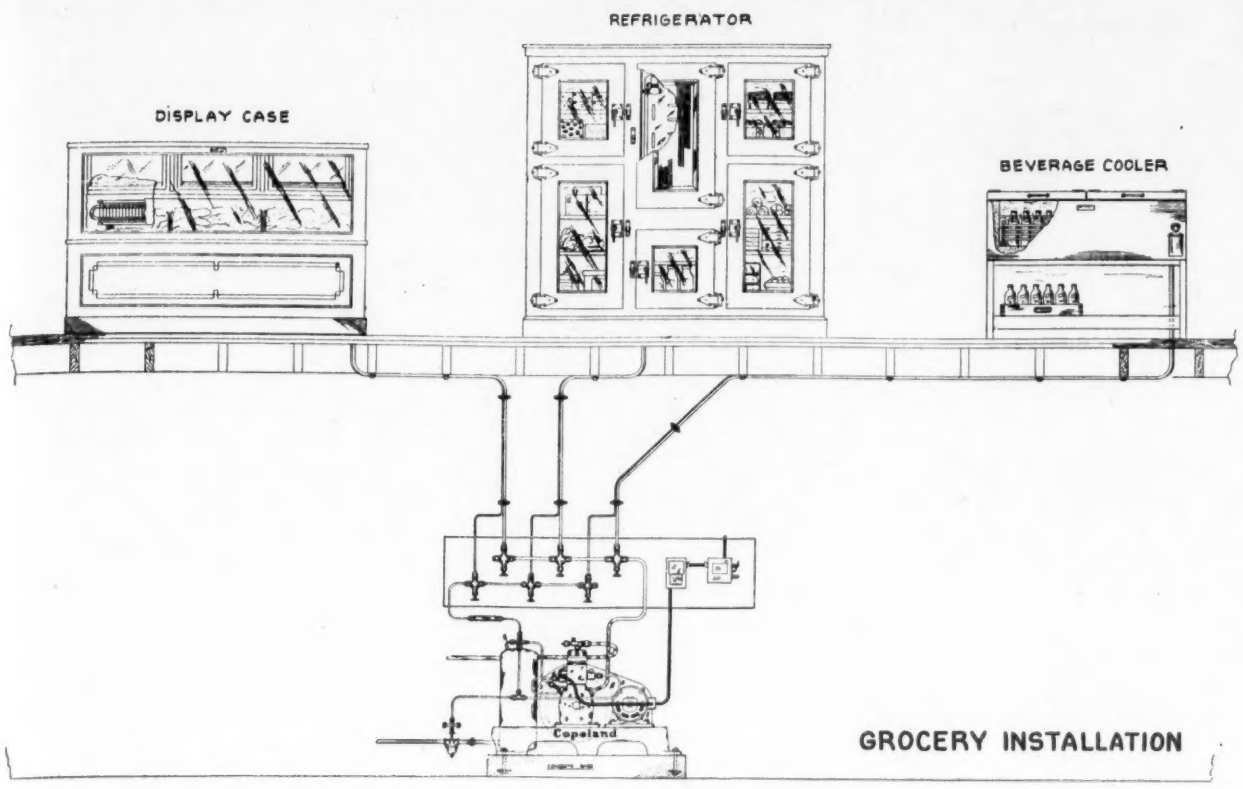
A reader of the NEWS recently wrote in to ask about the advisability of putting in an apartment house installation with the liquid and suction mains running direct to the roof, the riser lines being run down to serve the various apartment kitchens, instead of upward in the normal way.

The reason given for making this type of installation was that the first two floors of the building were given over to lobby space making the installation of tubing impracticable. A methyl chloride system was to be used, and the building was evidently already constructed and in use.

This type of installation is comparable to placing the compressor on the roof and operating the cooling coils below instead of above. Oil accumulation in the lower coils usually results, and the writer knows of no reliable way to prevent this.

It is well to avoid the reverse type of installation described above, even though drilling through concrete walls may be necessary to operate from below. Flooded-type multiple systems have often been installed in restaurants with the compressor located on the mezzanine floor, the freezing coils being located on the main floor below; and almost invariably it becomes necessary for service men to go back to such installations at intervals, drawing oil from "logged" coils below, and putting more oil into a compressor which is running dry on the upper level.

Placing Elements of a Grocery Installation



GROCERY INSTALLATION

Grocery refrigerators should be connected like this, according to Copeland engineers. Any unit can be shut off from the rest of the system by valves on the control board.

Apex Teaches Refrigeration Principles in Service Schools

(*Concluded from Page 1, Column 2*)

system, cycle of refrigeration and features of the Apex refrigeration unit.

For the remainder of the week, the classes convene at 8 o'clock in the morning, and with the exception of Saturday, run until 5:15 p. m. When the students assemble on Tuesday, they plunge right into the mechanical side of refrigeration.

The second day's program includes, applying gauges, confining refrigerant, removing, dismantling and reassembling the compressor.

On Wednesday, the class learns how to purge the system of air, and then put machine into regular operation. Next, the refrigerant is removed and the machine is later recharged and put back into operation.

General service trouble is taken up when the class assembles on Thursday. Each student is sent from the classroom, so that the instructor in charge has time to throw the unit out of adjustment in the same manner as might happen in the field. The student, when he returns to the room, is required to service the unit and put it back into 100 per cent operation.

Repairing Machines

Service repair in this operation includes any or several of the following: lack of refrigerant; high head pressure; inefficient compressor; defective gauges; defective control; loose eccentric; loose flywheel; loose belt; noisy discharge valve; frost back on suction line; over charge; vibration; seal squeaks; improper fan pitch; oil knocks; closed shut-off valves; plugged high pressure liquid line; defective expansion valve and improper settings; over-refrigeration; split flares on tubing; reversed motor; improperly set brushes; low voltage; improper wiring; open circuits, and closed circuits or short circuits.

In addition, questions on the questionnaire presented to each student are checked over in this operation. Sometimes, it is necessary to carry some of this work over to the following day, when the class is large, as some students are slower in locating the trouble.

The class on Friday resorts to the blackboard for further explanation of the details of a refrigeration system. Here the student draws sketches of all refrigeration and electrical hookups. He must also write down the name of every part of the Apex refrigerator.

Students must then call the names of the parts and tell what they look like, where located and what used for. Next, each service man must go over the refrigeration cycle, explaining every operation detail.

At the close of this session, the class makes a trip through the factory to see Apex refrigerators in production.

The half-day session on Saturday serves as a clean-up meeting at which left-over questions and answers are taken care of. Comparative data on other makes of refrigerators is also discussed.

Each member of the class during the week fills in a questionnaire in his spare time evenings, as the day sessions are crowded and all the time is used in the work. Questionnaires are not graded entirely by the answers given by the student, but also on his actual ability.

These questionnaires are graded, then returned to the employer to be given to the student to use as a reference manual as written in his own words, with necessary corrections by the instructor.

When a student makes a passing grade of 90 per cent or more, he is presented with a diploma.

Schools, similar to the refrigeration one, are also conducted periodically by the Apex company for washer, ironer and cleaner salesmen and servicemen.

COPELAND OF NEW HAVEN STARTS NEW SERVICE PLAN

(*Concluded from Page 1, Column 1*)

adequate service facilities. Securing dealers was no problem, providing service was a serious one.

The basis of the plan is to secure a commercial-service dealer in each key center who will take care of commercial sales and installations within the territory assigned to him, as well as furnish complete service for the small domestic dealer. The commercial-service dealer is not a key-dealer or sub-distributor. The detail of distribution is handled direct from New Haven, but he does take off the shoulders of the home office the burden of handling commercial sales and general service in remote territories.

The commercial-service dealer is required to set up a complete and efficient service organization at a cost which the small dealer with his limited volume could not afford. It is still somewhat of a problem, according to Mr. Tynan, to secure men willing to accept the responsibility and spend the money necessary to train a service staff and commercial salesmen. In return for a dealer's acceptance of the post, however, he receives the exclusive right to sell Copeland commercial equipment in his territory.

In the sale of commercial units, the commercial-service dealer is aided by the small dealers, who, while not permitted to handle commercial business, nevertheless naturally "run into" numerous sales possibilities in this line.

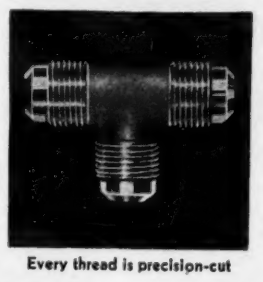
The small dealer reports these possible sales to the commercial-service man in his territory, and if the job is sold, receives a reasonable commission. In this manner, the small dealer really acts as a promotion man for his commercial-service organization. The actual sale and installation of commercial jobs secured on retail dealers' "leads" is naturally handled entirely by the commercial-service man.

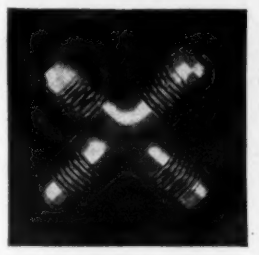
Through the new arrangement, the commercial sales and service staffs attached to the home office have been enabled to concentrate their efforts more in the territory adjacent to New Haven, not being required to be in the field the greater part of the time. While there are still a few points in connection with the commercial-service set-up to be ironed out, the system as a whole has been entirely successful, New Haven Electric officials report.

The New Haven Electric Company's building is laid out for the expeditious handling of refrigerators. Shipments are received in the basement, trucks entering directly into the building by means of a ramp, while outgoing merchandise is handled on the ground floor level. Trucks also enter the building on this floor, and are backed to a large loading platform.

The service shop is located in a small building which adjoins the main structure, and here service men have their testing and repair equipment. Mr. Ganter, the refrigeration manager, is in general charge of this department as well as handling much of the merchandising detail.

Storage capacity of 225 carloads is provided in the main building, which was acquired by the company a little more than a year ago.


Every thread is precision-cut


Tube seats are exact—making perfect joints

LOWERED COST BECAUSE . . . . . .

EVERY Commonwealth Brass fitting for the automati refrigeration industry is seepage-proof; each tube sea reaches the user unmarred, without nicks or sears; every thread is correctly chased to S. A. E. No. 2 standard and all fittings are 100 per cent inspected before leav ing the factory.

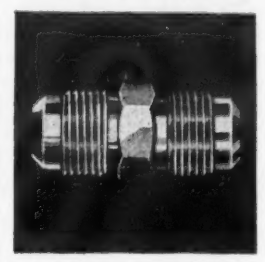
Labor savings in both assembly lines and in installation are responsible for lowered costs when Commonwealth fittings are used; wasted time is no longer a factor.

These fittings are made by an organization of specialists whose experience in supplying the industry dates back to the original automatic installation.

Executives, Superintendents and Mechanics can always depend on Commonwealth fittings because they are

BUILT RIGHT—TO STAY TIGHT

Our Catalog No. 36, describing the most complete line of fittings on the market, is yours for the asking.


Every fitting has an ample facto of safety

COMMONWEALTH BRASS CORPORATION
COMMONWEALTH AT G. T. R. R.
D E T R O I T

Its *simplicity*

means years of accurate, unfailing control

In countless walk-in boxes and cooler rooms all over the country, Time-O-Stat No. 149 Airswitches will be found standing guard over the thermometer.

They have rendered an aggregate of thousands of years of total service. This service has been so satisfactory and the original 2½-to-5-degree accuracy of control has continued to hold, that the reason certainly is worth looking into.

The reason for continued accuracy lies in the design. In the Airswitch, bearings and linkage and other trouble breeding details are absent. Only a positive acting mercury switch mounted directly on a non-corrosive bi-metal spiral—simplicity itself! Dust, dampness and corrosive atmosphere haven't a chance.

The Airswitch is easily set for any desired operating temperature. It is ruggedly built. The ivory finished case leaves nothing to be desired in the way of appearance.

In short, it's what the trade wants. You can give them control satisfaction with the Airswitch.

Complete details on request.

Minneapolis-Honeywell Regulator Co., 2807 Fourth Avenue South, Minneapolis, Minn. *Factories:* Minneapolis; Elkhart and Wabash, Ind. *In Canada:* Minneapolis-Honeywell Regulator Co., Ltd., Toronto and Montreal. *Branch Offices:* New York, Philadelphia, Boston, Providence, Detroit, Cleveland, Chicago, St. Louis, Indianapolis, Milwaukee, San Francisco, Syracuse, Rochester. *Export:* 801 Second Ave., New York, Cable Address: "Laboramus." Distributors in all principal cities.

All types of Commercial Refrigeration Should Have *Direct* Temperature Control

MINNEAPOLIS-HONEYWELL *and* TIME-O-STAT *Refrigeration Controls*

REFRIGERATION RUBBER WARE

Door and Frame Insulating Strips. Gliders for Refrigerator Legs. Top Hole Sections, Lid Collars, Sleeves, Brine Hole Stoppers for Ice Cream Cabinets, etc. Specializing in Parts Made to Customer's Design.

THE AETNA RUBBER CO.
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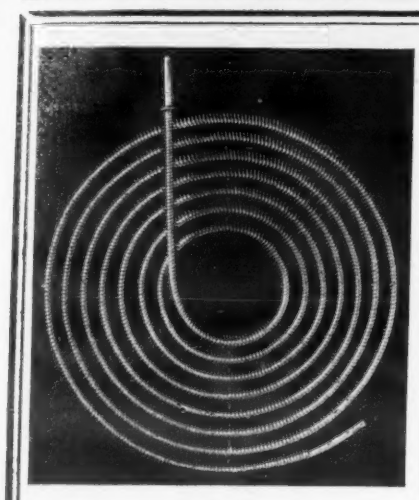

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ROME-TURNEY CONDENSERS

Made of heavy gauge deoxidized seamless copper tube. One-piece construction. High efficiency. Designs for all requirements and conditions.

Rome-Turney Radiator Co.
ROME, N. Y.

SERVEL UNIT KEEPS SOUTH AFRICA SERUMS

JOHANNESBURG, Union of South Africa—To protect the large and expensive quantity of serums used by the Medical Research Laboratory here in its research work for the government, a well-controlled refrigeration system was needed. Temperatures between 33° and 37° F. were required, without fluctuation beyond those limits.

An installation supervised by Erich Foerster, Servel foreign engineer, in cooperation with the South African General Electric Co., distributors for Servel commercial refrigeration in the Union of South Africa, was made to meet the need. Maximum and minimum Tycos temperature controls accomplished the desired regulation.

Protective devices were installed to guard against carelessness on the part of attendants who might go away and leave the doors of the refrigerator open, and to provide for line current failures. A siren, automatically operated by a storage battery, serves to warn the operators of these and similar accidents.

A second installation of practically the same design is now being made in the same building.

REPLOGLE APPEALS PATENT APPLICATION ON VALVE

WASHINGTON, D. C.—(UTPS)—John R. Replogle, Copeland engineer of Detroit, has appealed to the United States Court of Customs and Patent Appeals from a ruling of the Board of Patent Appeals of the U. S. Patent Office denying him a patent for inventing a snap valve action for refrigerating apparatus of the flooded type.

The Patent Office contends Replogle's invention is similar to one by Arthur H. Eddy of Windsor, Conn., which employs an ordinary spring pressure type of valve.

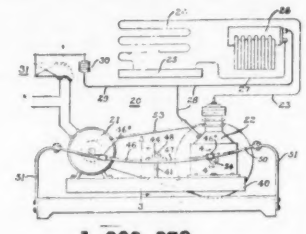
LATEST PATENTS ISSUED

ISSUED JUNE 9

1,808,910. REFRIGERATING APPARATUS. Gardner Tufts Voorhees, Boston, Mass. Filed April 18, 1921. Serial No. 462,283. 9 Claims. (Cl. 62—101.)

1. In a secondary refrigerator the combination of two concentric metallic cups and an insulating ring between and fixed to and joining their open upper ends, insulation between their opposed surfaces, a detachable brine conduit to and a detachable brine conduit from the inner cup.

1,808,939. REFRIGERATING APPARATUS. Otto M. Summers, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Filed Mar. 24, 1928. Serial No. 264,505. 5 Claims. (Cl. 248—16.)



1,808,939

1. In a support for driving and driven members oscillating about a substantially definite axis, the combination of a supporting member, means for floating supporting said member substantially about said axis of oscillation, said means including upwardly concave strap members and means connecting said member to said strap.

1,808,957. MANUFACTURE OF SEAMLESS TUBES. Wilhelm Kunst, Barmen, Germany, assignor to Heinrich Esser, Hilden, Germany. Filed Apr. 4, 1927, Serial No. 181,010, and in Germany Jan. 17, 1927. 2 Claims. (Cl. 80—62.)

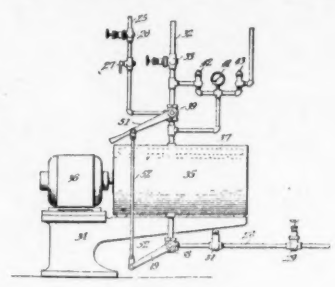
2. The process of producing seamless tubes by rolling, comprising reducing the wall thickness of a comparatively thick-walled tubular blank in a piercing mill, thereafter reducing the diameter of the said blank to the final diameter in a reducing mill and thereafter reducing the wall-thickness of said blank to the final thickness in a two-high rolling mill.

1,808,982. AIR CONDITIONER. Gordon D. Harris, Stamford, Conn., assignor to The Industrial Dryer Corp., Stamford, Conn., a Corporation of Connecticut. Filed Apr. 4, 1926. Serial No. 101,870. 25 Claims. (Cl. 62—139.)

1. In an apparatus of the class described, the combination of a flow channel including a plurality of passes, means for circulating air within the flow channel and through the successive passes thereof, means for artificially heating the air at the stages of its flow within the successive passes of said flow channel, a series of tubular members extending across the passes of said flow channel, absorbent material supported by said tubular members and exposed within the passes of said flow channel for the contact of air therewith, means for charging said absorbent material with liquid, and means for circulating air within said tubular members independently of the air flow within said flow channel.

1,808,999. REFRIGERATION. Thomas Shipley, York, Pa., assignor to York Ice Machinery Corp., York, Pa., a Corporation of Delaware. Filed Oct. 12, 1927. Serial No. 225,774. 20 Claims. (Cl. 62—115.)

1. The method of arresting the refrigerative action of an evaporator containing at least a small quantity of volatile refrigerant in the liquid state, which consists in isolating the evaporator and admitting



1,808,999

thereto gaseous refrigerant at a controlled pressure higher than that corresponding to the temperature of the liquid refrigerant in the evaporator.

1,809,002. REFRIGERATING APPARATUS. Lucien L. Torrey, Los Angeles, Calif. Filed Jan. 31, 1925. Serial No. 6,079. 15 Claims. (Cl. 62—115.)

1. In a refrigerating unit, an outer and an inner tank, a compressor in said inner tank, means to close said inner tank from the atmosphere, said compressor in operative condition preventing reflux of gas from said outer to said inner tank through said compressor, and means to shut off communication between said tanks in the inoperative condition of said compressor.

1,809,012. REFRIGERATOR. John Beck, Ashland, Wis. Filed Mar. 2, 1928. Serial No. 258,494. 5 Claims. (Cl. 62—51.)

1,809,075. REFRIGERATING APPARATUS. John C. Scovel, Jr., Chicago, Ill., assignor to The Creamery Package Mfg. Co., Chicago, Ill., a Corporation of Illinois. Filed Apr. 10, 1929. Serial No. 353,917. 3 Claims. (Cl. 62—95.)

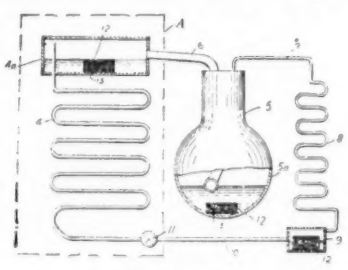
2. A pair of spaced cylinders endwardly joined to form a refrigerant expansion chamber therebetween, one of said cylinders having a refrigerant inlet opening in the bottom portion thereof and having a series of outlet openings spaced longitudinally in the top portion thereof, and a manifold sealed upon said cylinder in outward spaced enclosure of said series of outlet openings, said manifold having a suction outlet opening.

1,809,150. REFRIGERATOR CLOSURE. Enoch Swedman, St. Paul, Minn., assignor to Seegar Refrigerator Co., St. Paul, Minn., a Corporation of Minnesota. Filed Dec. 16, 1927. Serial No. 240,375. 9 Claims. (Cl. 20—35.)

1. A refrigerator door including, a body portion, an outer and inner enameled surface, and means in said body portion adapted to arcuate the free edge of the door in a manner to cause the same to seal tight when locked.

ISSUED JUNE 16

1,809,833. METHOD OF AND MEANS FOR STABILIZING REFRIGERANTS. Ransom W. Davenport, Detroit, Mich., assignor to



1,809,833

Chicago Pneumatic Tool Co., New York, N. Y., a Corporation of New Jersey. Filed June 17, 1926. Serial No. 116,512. 18 Claims. (Cl. 62—178.)

1. In a heat transforming system involving the change of state of a liquid capable of reacting with water, the method of inhibiting said reaction which consists in repeatedly bringing said liquid into contact with a substance adapted to supply hydroxyl ions thereto.

1,809,834. METHOD AND MEANS FOR STABILIZING THE ATMOSPHERE OF REFRIGERATING SYSTEMS. Ransom W. Davenport, Detroit, Mich., assignor to Chicago Pneumatic Tool Co., New York, N. Y., a Corporation of New Jersey. Filed Mar. 25, 1927. Serial No. 178,169. 5 Claims. (Cl. 62—115.)

1. The method of stabilizing the atmosphere contained in a refrigerating system of the closed cycle type which comprises continuously acting upon said atmosphere in the highest pressure lowest temperature part of the system to remove any active oxidizing components of said atmosphere.

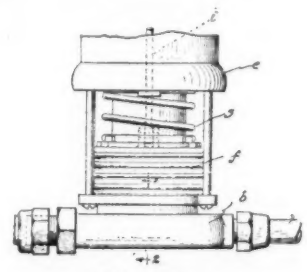
1,809,893. REFRIGERATOR. Jeremiah Flynn, St. Louis, Mo., assignor of one-fourth to Frank Tirrell and one-fourth to Jerome Flynn, St. Louis, Mo. Filed June 26, 1929. Serial No. 373,823. 4 Claims. (Cl. 62—48.)

1. A refrigerator, partitions dividing the inside of said refrigerator into separate compartments and having openings therethrough forming communications between said compartments, slides operative to open and close said openings to open and close communication between said compartments, a rod extending across each of said openings, a sleeve in connection with each of said slides mounted for sliding movements along the corresponding rod, a bell crank lever corresponding to each of said slides, a pivotal connection between one arm of each bell crank lever and the corresponding slide, a plunger engaging the other arm of each bell crank lever, and doors for the respective compartments for engaging said plungers and holding said bell crank levers in position to hold said slides in open positions when said doors are closed.

1,809,900. REFRIGERATOR. William R. Jeavons, Cleveland Heights, Ohio. Filed Nov. 8, 1930. Serial No. 494,343. 7 Claims. (Cl. 62—108.5.)

1. The combination, with a refrigerator having a space for the reception of food and a door, of a refrigerant container within said space and having a freezing chamber projecting thereinto from one of the walls thereof, and a shield for the mouth of said chamber, the said shield extending outwardly from said wall a distance sufficient to subject the outer end of said shield at least periodically to a temperature above the freezing point whereby the entrance to said chamber through said shield will not be detrimentally obstructed by an accumulation of ice.

1,809,928. REFRIGERATOR CONTROL. Patterson Farmer, Detroit, Mich. Filed Nov. 27, 1925. Serial No. 71,850. 3 Claims (Cl. 62—2.)



1,809,928

1. In a refrigerator control, the combination of a conduit bearing the expanded gases of the refrigerating apparatus and including a fixture having a plurality of branches for dividing the gases and conveying the same through the fixture in a plurality of streams, a separate thin metal piece defining said branches and a fluid expansion type of thermostat provided with a depending nonexpansive chamber fitted snugly in said nxture and suspended between said branches to place the chamber in immediate heat conductive relation with said thin metal piece to prevent the entrance of convection currents between said chamber and fixture.

1,809,929. CABINET CONSTRUCTION. Patterson Farmer, Detroit, Mich. Filed Oct. 13, 1927. Serial No. 225,887. 1 Claim. (Cl. 220—9.)

A cabinet for containing food stuffs or the like, comprising in combination inner and outer substantially nonheat-conducting walls spaced to provide a vacuum space, valve means in the outer wall consisting of a port extending from the exterior side of the outer wall to the middle of said outer wall, a second port in the outer wall spaced from and parallel to, the first mentioned port, and extending from the middle of the outer wall to the interior surface of the outer wall, said first and second ports being connected by a conduit, a valve member closing the second port and a closure for the first-named port, whereby the vacuum between the inner and outer walls may be tested without impairing said vacuum.

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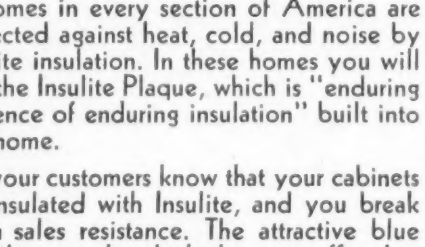

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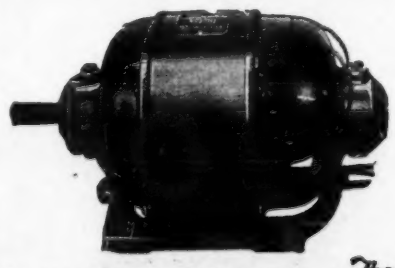

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IN REFRIGERATION FIELD

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1,809,957. COMPRESSION REFRIGERATING APPARATUS. Leonard Kay Wright, Astoria, Long Island City, N. Y. Filed Aug. 27, 1926. Serial No. 131,944. 7 Claims. (Cl. 62—116.)

1. In a refrigerating apparatus, an evaporator equipped with a supply line, a suction line, and a siphoning tube so arranged that in normal operation a portion of its length is above the surface of the liquid refrigerant; one end of the siphoning tube being in close proximity with the lowest portion of the inside of the evaporator the other end of said tube being connected to said suction line.

1,809,958. REFRIGERATION APPARATUS. Leonard Kay Wright, Jackson Heights, Long Island, N. Y. Filed Jan. 27, 1928. Serial No. 249,949. 8 Claims. (Cl. 62—118.)

1. A liquid cooler comprising a cabinet, an elongated compartment in the cabinet open at each end, a generator positioned in the upper portion of the compartment and a condenser subjacent generator.

4. A liquid cooling device comprising a two compartment cabinet, a well within one of the compartments surrounded with insulating material, an expansion coil and a receiver within said compartment, a generator and condenser within the other compartment so arranged as to induce the flow of a cooling air through the compartment.

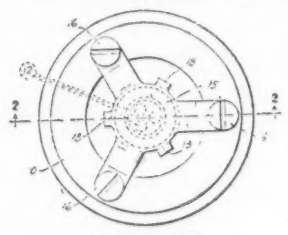
1,810,202. PACKLESS VALVE. Joseph H. Cheetham, Detroit, Mich. Filed Sept. 21, 1925, Serial No. 57,584. Renewed Nov. 19, 1930. 2 Claims. (Cl. 251—47.)

1. In a valve, a casing, a valve member adapted to seat within said casing, an actuating stem for said valve having an end portion projecting from said casing, a handle for actuating said stem, having a central opening between its top and bottom faces, a member carrying the handle entering said opening, and rigidly connected to the handle, said member having a driving engagement with said projecting portion of the stem and being slidable upon said portion, and said member being formed with a chamber opening in its outer end, means within said chamber securing said member upon the stem, and a closure for the chamber of said member carried by said member within said central opening of the handle and removable independently of any loosening of said handle on said member and removable independently of the handle securing means.

1,810,410. COOLING AND VENTILATING APPARATUS. Andrew B. Alldredge, Sweetwater, Texas. Filed May 31, 1930. Serial No. 458,795. 3 Claims. (Cl. 261—29.)

1. A cooling and ventilating apparatus comprising a casing, open at its top, an air intake spout extending laterally from the lower portion of the casing, a fan in said spout for delivering air into the casing, a water supply pipe communicating with the casing below the spout, means for conducting water from the casing and delivering the same into the casing at the top thereof, a foraminous baffle within the casing in the path of the delivered water, and a second foraminous baffle within the casing curving upwardly from that side of the casing at which the spout is located, and at a point below the spout, and extending to the opposite side of the casing.

1,810,498. VALVE. Clyde Edward Ploeger, Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a Corporation of Delaware.



1,810,498

Filed Mar. 5, 1929. Serial No. 344,116. 12 Claims. (Cl. 251—119.)

1. A valve comprising a port member having a port therein and a valve closure for covering said port comprising a plurality of flexible flat plates having securing portions secured to different parts of said port member and converging from the respective secured points toward the port and toward each other and having overlapping portions adjacent said port.

1,810,530. REFRIGERATOR LATCH. Adolph Rubin, St. Louis, Mo. Filed Jan. 21, 1929. Serial No. 333,764. 9 Claims. (Cl. 292—332.)

1. A refrigerator door latch comprising a base, a handle pivotally mounted on said base for rotation in a plane transverse of the door, a bolt integral with said handle adapted to cooperate with a keeper, a spring to actuate the bolt, and a trigger adapted to engage the bolt and hold it in an inoperative position after it has been disengaged from the keeper.

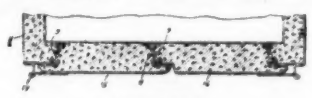
1,810,569. REFRIGERATION APPARATUS. George W. Mason, Detroit, Mich., assignor to Copeland Products, Inc., a Corporation of Michigan. Filed Mar. 26, 1930. Serial No. 439,014. 8 Claims. (Cl. 62—126.)

1. In combination, a freezer for refrigeration systems composed of superposed sheets of metal having refrigerant passages between them and a float controlled refrigerant tank integrally connected with the freezer, said tank being positioned substantially on the level of the lowermost of said passages.

1,810,582. SHAFT SEALING DEVICE. Edwin H. Steedman, St. Louis, Mo. Filed Apr. 27, 1927. Serial No. 186,964. 2 Claims. (Cl. 286—11.)

1. In a compressor or similar machine, the combination of a crank shaft, a crank case having an opening, in one of its walls through which said crank shaft passes, a stationary rubbing surface on the outer side of said wall surrounding said crank shaft opening and provided with two concentric, annular grooves arranged intermediate the inner and outer edges of said rubbing surface, a bellows surrounding said shaft and attached at one end by a gas-tight joint to a fixed part on said shaft, a sealing member connected by a gas-tight joint to the opposite end of said bellows and having a rubbing surface that co-acts with said stationary rubbing surface, said co-acting rubbing surface constituting the only joint through which air or gases can enter or escape from the interior of said bellows, and means for keeping both of the grooves in the stationary rubbing surface filled with a medium that will effectively seal the joint between said rubbing surfaces.

1,810,615. REFRIGERATOR CABINET. James L. Knight, Schenectady, N. Y., assignor to General Electric Co., a Corporation of New York. Filed Apr. 12, 1927. Serial No. 183,205. 15 Claims. (Cl. 220—9.)

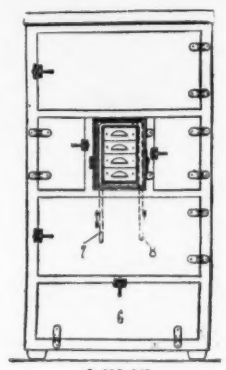


1,810,615

5. A refrigerator cabinet having spaced metallic inner and outer walls, a door comprising two cooperating door members hinged at their outer edges and adapted to engage each other at their adjacent edges, an opening frame for said doors and the edge portions of said door members being formed of thin strips of a resinous product.

6. A refrigerator cabinet having inner and outer metal walls spaced apart and provided with a door opening, a frame for the door opening consisting of a thin non-hydroscopic non-metallic material having low heat conductivity and being impervious to moisture, said frame extending through the door opening and connecting said inner and outer walls to form a closure between them.

1,810,841. ELECTRIC REFRIGERATOR. Hugo Mock, New York, N. Y. Filed Dec. 7, 1929. Serial No. 412,551. 6 Claims. (Cl. 62—99.)



1,810,841

1. In an electric refrigerator, a refrigerating coil and enclosure in the center thereof, and a series of refrigerating chambers circumferentially abutting and surrounding said central refrigerating coil, said chambers being entirely disconnected from each other.

1,810,857. COOLED DEVELOPMENT APPARATUS. Wilford G. Thompson and James E. Jordan, El Paso, Texas. Filed Mar. 17, 1930. Serial No. 436,586. 2 Claims. (Cl. 95—89.)

1. In a developing apparatus, a cabinet, a tank in the upper portion of the cabinet exposed through the upper portion of said cabinet, a receptacle within and spaced from the bottom and sides of the tank and having intersecting partitions dividing the interior space of the receptacle into a plurality of compartments all opening substantially through the upper part of the cabinet, a refrigerating coil in one of the compartments, a refrigerating unit contained in the lower portion of the cabinet and connected to said coil, a cooling coil in said compartment connecting with the source of wash water supply and with an adjacent compartment for wash water, and a fixing bath contained in a third compartment.

ALBERT J. GEBHARDT DIES

MILWAUKEE — Albert J. Gebhardt, 51, president of the Advance Refrigerating Co., manufacturer of refrigerating machines, died here June 3.

NEW COMMERCIAL ENGINEER

LITTLE ROCK, Ark.—Fred D. McCoy has joined 555, Inc., Kelvinator distributor here, as commercial refrigeration engineer. Prior to his present connection, he served as Kelvinator dealer at Pine Bluff, Ark.

HARRISON SMITH CO. CONDUCTS MAJESTIC SERVICE SCHOOLS

OKLAHOMA CITY, Okla. — E. H. Sauer of the engineering department of Grigsby-Grunow Co. has just finished conducting Majestic refrigeration schools for the Harrison Smith Co., Majestic distributor here and also in Tulsa and Amarillo. Mr. Sauer discussed the service and sales of the Majestic refrigerator before the attending dealers.

DEVELOPMENT DEVICE USES REFRIGERATION

EL PASO, Tex.—An electrically operated cooling unit that provides improved developing apparatus for photographs of various kinds has been patented by W. G. Thompson, refrigeration engineer of the El Paso Electric Co.

This device covered, by U. S. Patent 1,810,857, mentioned in the adjoining column, provides means whereby wash water and solutions are kept at the constant low temperature desirable for development work, and is particularly applicable to work with X-ray negatives, according to Mr. Thompson.

The high temperature of water prevalent everywhere in summer and encountered in most Southern states throughout the year formerly placed a serious obstacle in the way of satisfactorily processing X-ray films, as the use of ice frequently failed to give the desired results, he says.

It is now possible, with this improved developer, to maintain a constant temperature that keeps wash water and fixing and developer baths sufficiently cool all the time.

A refrigerating coil used in the developer is connected to a compressor and condenser, driven by a small motor. Separate insulated containers hold an adequate supply of wash water, and solutions for fixing and developer baths.

Whenever a rise in temperature occurs above a predetermined low degree in the water, a thermostatic control automatically starts the condensing unit. By keeping the wash water and solutions at constant low temperature, it is a simple matter to develop a film without a moment's delay, Mr. Thompson claims.

The developer is small and compact, yet will accommodate all sizes of films. It is built into a metal cabinet.

BIRMINGHAM GAS CO. GETS 40-UNIT ORDER

BIRMINGHAM, Ala.—The Birmingham Gas Co. has closed a deal for 40 Electrolux units for a new apartment building in Forest Park. Work on the building, yet unnamed, has already started.

Four units have also been installed in the Wester House, in Norwood, according to A. H. Ayres, manager of the refrigeration department.

SAN FRANCISCO MEAT CO. ORDERS BIG COOLER

SAN FRANCISCO — Cochran & St. John, Ltd., manufacturer of Kno-Frost compressors, has installed a cooler, 12x12x30 ft. in the plant of the Durham Meat Co. of this city.

Two 1½ hp. compressors are used to keep the temperature of the cooler between the 36 and 38 degree mark.

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The Alco Senior expansion valve will handle loads up to 50 tons and the Junior expansion valve is intended for loads up to one ton.

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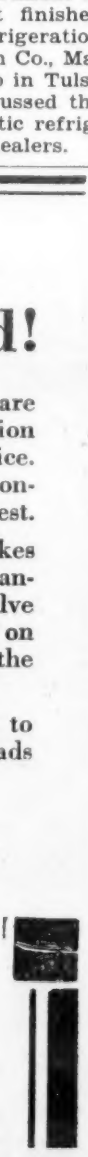
Manufacturers of constant pressure expansion valves, Thermo valves, high pressure float valves, liquid magnetic stop valves, and suction line stop valves.



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